HIGH-END ECOTOURISM AND RURAL COMMUNITIES IN SOUTHERN AFRICA: A SOCIO-ECONOMIC ANALYSIS

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"*Ultimately conservation is about people. If you don't have sustainable development around these (wildlife) parks, then people will have no interest in them, and the parks will not survive*"

- Nelson Mandela

"In the end we will conserve only what we love,
We will love only what we understand,
We will understand only what we are taught"

- Baba Dioum

ABSTRACT

This thesis argues that at high end ecotourism sites in southern Africa good relationships with local communities are not merely a normative 'good thing', but are a likely prerequisite for the long-term viability of both natural resources and the economic ventures that depend on them. Communities are thus active participants in both conservation and tourism. As rising populations increase pressure on conserved land, both conservation and ecotourism will need community support and goodwill. Such rural communities adjacent to protected areas have traditionally enjoyed consumptive use of local resources. Formally set-aside protected areas may help conserve biodiversity, but often impose costs on rural communities, increasing human-wildife conflict and reducing the land available for agriculture and consumptive use. Sustained community support for these areas therefore requires visible benefits. One source of these is ecotourism. Using primary data from over 1800 community interview schedules, collected across six southern African countries (Botswana, Malawi, Namibia, South Africa, Zambia and Zimbabwe), the thesis seeks to establish the incentives that matter most to rural communities in conservation areas, how ecotourism affects household incomes, and the determinants of community attitudes towards conservation and ecotourism. Data analysis included descriptive statistics, regressions and probit models. The findings highlight the importance of ecotourism employment, formal education, livelihood diversification and family employment in conservation or ecotourism in determining rural household incomes. The thesis argues that a steady, permanent income from employment in ecotourism does more to reduce long-term poverty than simple transfers, which may cultivate dependence and change behaviours in ways that increase future vulnerability. Community attitudes towards conservation and ecotourism were also impacted by numerous factors, but formal employment, formal education and having family employed in conservation or ecotourism significantly impacted attitudes, as did some level of community involvement in the related ecotourism operation. Based on the interview schedule results, past literature, and the author's 15 years of personal experience in ecotourism and rural communities, a set of factors to be considered by the private sector when engaging with rural communities is presented.

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PREFACE

All interview schedules for this thesis constitute primary data and were collected for the specific purpose of analysing the impact of high-end ecotourism on rural communities living in or adjacent to conservation areas in southern Africa. Prior to the submission of the thesis, the following publications were made using sections of the primary data from this thesis.

Snyman, S. (2012a) Ecotourism joint ventures between the private sector and communities: An updated analysis of the Torra Conservancy and Damaraland Camp partnership, Namibia, *Tourism Management Perspectives*, 4, 127-135.

Snyman, S.L. (2012b). The impact of land management systems on community attitudes towards tourism and conservation in six southern African countries. *Parks 18*(2), 20-31.

Snyman, S.L. (2012c). The role of ecotourism employment in poverty reduction and community perceptions of conservation and tourism in southern Africa, *Journal of Sustainable Tourism*, *20*(3), 395-416.

Snyman, S. & Spenceley, A. (2012). Key sustainable tourism mechanisms for poverty reduction and local socio-economic development in Africa. *Africa Insight*, *47*(2), 76-93.

Spenceley, A. & Snyman, S. (2012). High-end ecotourism's role in assisting rural communities in reaching the Millennium Development Goals. In Bricker, K., Black, R. & Cottrell, S. (eds.), S*ustainable tourism & the millennium development goals: effecting positive change*. Jones & Bartlett Learning, LLC, 89.-106.

No publication appears in its exact format in the thesis, except for parts of Appendix A and parts of section 7.3.1 (page 174) which are adapted excerpts from Spenceley and Snyman (2012). This is stated in the Appendix and Chapter Seven and was a 50:50 contribution from both authors. A forthcoming publication in *Development Southern Africa* is also taken from the primary data, but also not included in the thesis in its article format, as is one under review in *Koedoe* and one under review in the *Journal of Ecotourism*. The details of these papers are below.

Snyman, S. (forthcoming (a)). Assessment of the main factors impacting community attitudes towards tourism and protected areas in six southern African countries, *Koedoe* (Special issue on Tourism and Protected Areas). Under review.

Snyman, S. (in press). Household spending patterns and flow of ecotourism income into communities around Liwonde National Park, Malawi, *Development Southern Africa.* Accepted, awaiting publication in October 2013.

Snyman, S. (forthcoming (b)). Partnerships between private sector ecotourism operators and local communities in the Okavango Delta: A Question of Trust? *Journal of Ecotourism.* Under review.

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LIST OF ACRONYMS

ADMADE	Administrative Management and Design for Game Management Areas
ASLF	African Safari Lodge Foundation
AWF	African Wildlife Foundation
BEE	Black Economic Empowerment
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources
CBC	Community-Based Conservation
CBNRM	Community-Based Natural Resource Management
CBO	Community-Based Organisation
CBT	Community-Based Tourism
CI	Conservation International
CITW	Children in the Wilderness
CPA	Communal Property Association
CSO	Central Statistical Office
CSR	Corporate Social Responsibility
DARE	De-Agrarianisation and Rural Employment
DEAT	Department of Environment and Tourism (South Africa)
DFID	Department for International Development
DRC	Democratic Republic of Congo
GDP	Gross Domestic Product
GMA	Game Management Area
HDI	Human Development Index
HWC	Human-Wildlife Conflict
IMF	International Monetary Fund
IRDNC	Integrated Rural Development and Nature Conservation
IUCN	International Union for the Conservation of Nature
IWPA	iSimangaliso Wetland Park Authority
JV	Joint Venture
KNP	Kruger National Park
LIRDP	Luangwa Integrated Resources and Development Project
MET	Ministry of Environment and Tourism (Namibia)
MOH	Ministry of Health
MSC	Marine Stewardship Council
NACSO	Namibian Association of CBNRM Support Organisations
NEF	National Environmental Fund
NGO	Non-Governmental Organisation

NRMP	Natural Resources Management Programme
OC	Opportunity Cost
OCT	Okavango Community Trust
OLS	Ordinary Least Squares
PA	Protected Area
PPP	Public-Private Partnership
PPT	Pro-Poor Tourism
PR	Public Relations
PSM	Propensity Score Matching
RDC	Rural District Council
SANDF	South African National Defence Force
SANParks	South African National Parks
TDRC	Tropical Diseases Research Centre
TRA	Theory of Reasoned Action
TSA	Tourism Satellite Account
UNDP	United Nations Development Programme
VDC	Village Development Committee
WCED	World Commission on Environment and Development
WMA	Wildlife Management Area
WS	Wilderness Safaris
WTO	World Tourism Organisation
WTP	Willingness to Pay
WTTC	World Travel and Tourism Council
WWF	World Wildlife Fund
ZAWA	Zambia Wildlife Authority
ZIMSTAT	Zimbabwe National Statistics Agency

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CHAPTER ONE - INTRODUCTION

Recent conservation efforts in Africa have increasingly involved the democratisation of the environment. This has partly been driven by a desire to improve outcomes but also by political necessity. Rising rural populations, high poverty levels and an increasingly emotive land ownership rhetoric have increased the pressure on those keeping land for conservation and particularly those setting aside new areas for conservation, and suggest a potentially inevitable conflict between conservation and rural communities.

This issue is not a new one. Writing of the Highland clearances in Scotland in the 1800s, which saw crofting tenants displaced to make place for deer forests, Marx (1867) wrote that "*Deer-forests and the people cannot co-exist. One or the other of the two must yield.*" As Marx made clear, the issue then (as now) could be reduced to weighing up opportunity costs and revenue potentials: "*a mountain range laid out in forest is, in many cases, more profitable to the proprietor than when let as a sheep-walk. ... The huntsman who wants a deer-forest limits his offers by no other calculation than the extent of his purse.*"

In southern Africa, many early conservation efforts from the late 1800s and early 1900s either displaced local communities or restricted their access to natural resources. This naturally affected community attitudes towards conservation, and efforts were later made to rectify growing tensions. In the last few decades of the 20th century these efforts led conservation and ecotourism authorities to increasingly include communities in the decision-making and benefit sharing process in order to garner their support. Although the results of these policies were mixed, it is clear that the future success of conservation and, consequently, ecotourism in many areas will depend on, among other things, the attitudes and behaviour of communities living in or adjacent to protected areas (PAs). It will also depend on community responses to interventions aimed at enhancing inclusivity and generating benefits. One of the main challenges is, therefore, to find ways to translate conservation and ecotourism successes into meaningful, real and visible socio-economic benefits for local communities.

This thesis explores the relationships between rural communities and conservation associated with a select group of high-end ecotourism lodges spread across six southern African countries: Botswana, Malawi, Namibia, South Africa, Zambia and Zimbabwe. The main focus of the study is on the role of ecotourism in reducing poverty by increasing real household incomes and opportunities, rather than mere temporary poverty alleviation. It

argues that a steady, permanent income from employment in ecotourism does more to reduce long-term poverty than simple transfers, which may cultivate dependence and change behaviours in ways that increase future vulnerability.

A feature of the present study is its range. While economic studies on the impact of tourism are numerous (e.g. Barnes, MacGregor & Weaver, 2001; Bandyopadhyay, Shysamsundar, Wang & Humavindu, 2004; Mbaiwa, 2003; Muchapondwa, 2003; Turpie et al., 2006), the majority are confined to one country, and in some cases two. An analysis of the flow of money from ecotourism operations to local communities, predominantly through the direct payment of wages and salaries, allows for a comparative analysis of income structure and spending in rural areas. A similar comparative analysis is undertaken of conservation attitudes across six countries. These are important in illustrating the role that ecotourism can play in rural development and poverty reduction, as well as in the arena of biodiversity conservation and the moulding of people's attitudes towards it.

1.1. STATEMENT OF THE PROBLEM

The future sustainability of conservation, and therefore ecotourism, largely depends on the support of communities living in or adjacent to PAs. It is clear that incentives and institutions matter and it is, therefore, important to understand the incentives and institutions that matter most to communities in rural areas in Africa. It is also valuable to understand the factors that affect the management of income, expenses and attitudes.

1.2. BACKGROUND TO THE PROBLEM

This section includes a number of broad generalisations about the problems faced by many rural households in southern Africa. To a greater or lesser degree, these problems were observed in all the study communities. While these generalisations are relevant in the case studies for this thesis, there are significant differences between the incomes, alternative employment opportunities and dependency ratios of the communities studied.

Africa is a continent of diversity: of flora, fauna, weather conditions, landscapes and ethnic groups. Sustaining much of this diversity requires the co-existence of wildlife with growing human populations and hence that communities recognise and value biodiversity as an asset. Ideally, biodiversity should be the basis of strategies to diversify household incomes, reduce poverty and promote socio-economic development. Karl Marx's (1867) statement that "*Deer have received extended ranges, while men have been hunted within a narrower and still*

narrower circle" is a sentiment that still exists in many rural communities living adjacent to PAs in Africa. People in the villages adjacent to South Luangwa National Park in Zambia expressed to the author that "*ZAWA (The Zambian Wildlife Authority) care more for animals than they do about us.*" Ideally, sustainable conservation requires that both people and wildlife are cared for equitably.

Rural African communities are largely characterised by high levels of poverty and unemployment, low levels of education and skills and a heavy dependence on natural resources for survival (Ellis, 1999; Scherl et al., 2004). It was observed by the author (2009 to 2012) that households in poor, rural areas rely predominantly on subsistence agriculture. Growing populations and the impacts of climate change are however putting severe pressure on subsistence lifestyles to sustain rural populations (Ellis, 1999; Morton, 2007; Nelson et al., 2009; Owino, Jillo & Kenana, 2012). A lack of development, skills and infrastructure results in few alternative livelihoods being available and, therefore, few people finding employment. Rural community lifestyles often involve families living together and sharing income and expenses; leading to high dependency levels, with those who do find employment supporting a large number of people. Increasing the opportunities for permanent employment is therefore increasingly important. Livelihoods and dependency levels will be discussed in greater detail in Chapter Five.

The connections between wealth/poverty and the environment lie at the heart of this study. For the poor the environment may be a threat or a consumption opportunity, to the rich it is a luxury (recreational) good. What is needed is an avenue for wealth transfer from the affluent who want to enjoy the environment, to the poor, who frequently suffer from it. Ecotourism can provide this avenue. Simple market processes have hitherto failed to resolve the problems of the rural poor who have a surplus of 'environment.' Ideally, they should be able to sell it to the urban affluent. One reason why they cannot is that while resource management in Africa is governed formally by institutions, informally it is influenced by cultural customs and norms (Fennell, 2008). A growing literature stresses the power of such norms and customs and argues that incorporating them into management is necessary if one is to achieve the sustainable utilisation of wildlife and the environment.

The reported connections between poverty and environmental degradation are numerous (Adam et al., 2004; Fisher & Christopher, 2007; Raufflet et al., 2008; Scherl et al., 2004), though affluence too imposes costs on the environment: increased wealth can lead to an

increase in the use of natural resources, increased land conversion for agriculture or result in greater pollution and therefore environmental degradation (Stronza, 2007). Some researchers have argued an alternative approach; that the environment is a normal good, and hence that growing affluence improves environmental quality. The combination of these views yields the Environmental Kuznets Curve which suggests that as national income rises, the environment initially suffers, but beyond some point it benefits. While its econometric underpinnings remain controversial (Stern, 1998, 2004; Stern & Common, 2001) the intuitive foundations of the Environmental Kuznets Curve remain appealing.

Land, whether for agriculture or conservation, is a scarce resource in most of southern Africa. This scarcity means that setting an area aside for one use implies an opportunity cost in terms of the other (Adams et al., 2004; Kideghesho, Røskaft & Kaltenborn, 2007; Norton-Griffiths & Southey, 1995; Sibanda & Omwega, 1996; Walpole & Thouless, 2005). Variations in land fertility, rainfall patterns and population density mean that these opportunity costs vary from country to country and area to area. From a policy perspective, escalating population growth and the resultant increase in competition for land mean that the opportunity cost of land is likely to increase (Alexander, 2000; Buckley, 2010; Kideghesho et al., 2007; Browne-Nuñez & Jonker, 2008). Sustainability is therefore likely to be an increasingly important feature of any land use. More recently the debate about land sharing and land sparing has arisen (de Clerck, 2013). De Clerck (2013) argues that as the world is facing the dual challenge of sustainably providing enough nutritious food for more than 9 billion people while conserving the natural resource base upon which we are all dependent, it is logical to integrate agriculture and conservation objectives.

Much of southern Africa is marginal for crop cultivation and sometimes even for extensive livestock grazing, but supports a wide range of wildlife species and is therefore suitable for wildlife tourism (Snyman, in press). Despite the trade-offs involved, from a community welfare perspective, conservation and agriculture need not be mutually exclusive (Snyman, 2009, 2012(a)). Where agricultural productivity is low or marginal (e.g. Namibia) local communities rely heavily on natural resources for food, fuel and construction (de Boer & Baquete, 1998). The environment also serves as a safety-net providing 'famine foods' in times of drought. In such areas, tourism's importance as an alternative livelihood and source of employment is enhanced. A number of authors (Ashley & Roe, 2002; Boudreaux & Nelson, 2011; Lapeyre, 2011b; Scherl et al., 2004; Spenceley & Goodwin, 2007) have

stressed that tourism is one of few activities able to generate income in impoverished agriculturally marginal rural areas.

The conventional risks facing subsistence farmers, uncertain rains, insect and animal pests, are well known. It has been increasingly argued that climate change should be added to these. Ellis (1999) argues that climate change will increase small farmers' dependence on the market economy and reduce the subsistence lifestyle's ability to sustain rural populations and satisfy their development aspirations. There are studies indicating that climate change is already having a real impact on rural Africa, affecting climate variability, seasonal shifts and precipitation patterns, and that this situation will deteriorate further (Morton, 2007). Farming, fishing and tourism, each a significant economic activity of the rural areas in southern Africa, are all at risk in the face of climate change (Pleumarom, n.d.). Although climate change does play a role, a more pertinent problem observed in most rural areas is increasing populations and greater competition for land. Long-term policies on land use should therefore encourage diversification of rural livelihoods to lower the risks faced by rural households (Ellis, 1999, 2000; Ellis & Freeman, 2004).

One such form of diversification is community-based natural resource management (CBNRM). In southern Africa this has had an interesting and varied history (Hulme & Murphree, 2001). While formal state-based conservation in Africa initially started with the concept of 'fortress conservation,'[1] the past four decades saw it increasingly move to the idea of community-based conservation (CBC) and the inclusion of communities in the conservation process. In part, this shift reflected a recognition that many African communities have a conservation ethic within their cultures (Infield, 2001; Jones, 2001; Makindi, 2010; Raufflet, Berranger & Gouin, 2008; Turner, 2006). It also reflected an awareness that incentives matter, and that local communities (who often incur costs as a result of conservation) should receive some form of its benefits.

Overall sustainability, however, incorporates a balance between economic, social and environmental factors. What is important, particularly in rural areas, is sustainable development as defined by the Brundtland Commission: "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*" (World Commission on the Environment and Development (WCED), 1987). While

[1] Traditionally, 'fortress conservation' involved the creation of protected areas, the exclusion of people as residents, the prevention of consumptive use and minimization of other forms of human impact (Adams & Hulme, 2001, p. 10).

sustainability requires a balance between people, their land-use practices and biodiversity conservation, the particular structure of this balance will differ from country to country, depending on the local socio-economic conditions, political structures and the institutions present (Kepe, Wynberg & Ellis, 2005). This is important, since the efficacy of conservation efforts on public and private lands in Africa depends, in some measure, on the extent to which these areas are socially, economically and ecologically integrated into the surrounding area (Kepe et al., 2005, p. 8) and the lives of the people in these areas.

One reason for the variations in policy needed to achieve sustainability in rural areas is that communities are not homogenous (Boissevan, 1996, as cited in Telfer & Sharpley, 2008; Carlson, 2000, as cited in Berkes, 2003; Igoe, 2006; Jones, 1999a, 2001; Novelli & Scarth, 2007; Scheyvens, 1999; Worah, 2002). Boggs (2004) suggests a number of variational types including ethnic background, historical land use practices, age and level of cohesion of the community, size, natural resources available in the area, land tenure, historical ties to the land, cultural and spiritual beliefs regarding their interaction with wildlife and other natural resources and their acceptance of a market economy. This heterogeneity of communities needs to be understood and appropriately integrated into conservation and ecotourism in Africa.

What is clear is that rural socio-economic development and sustainable resource management in Africa are inextricably interlinked and policy and management need to account for this.

1.3. DEFINITION OF KEY TERMS

As the concept of community is central to the analysis in this thesis the term needs to be clarified. For the purposes of this thesis we follow Borrini's 1992 (as cited in Borrini-Feyerabend, Kothari & Oviedo, 2004, p. 9) description of it as "*a human group sharing a territory and involved in different but related aspects of livelihoods – such as managing natural resources, producing knowledge and culture, and developing technologies and practices,"* while a local community is a group who interact regularly or who influence one another's daily lives. In this study, such local communities may be mobile, permanently settled or semi-nomadic such as the Himba people of north-west Namibia. The communities are found living either within or adjacent to the PA, or in some cases, having left the PA, now living further afield (e.g. the Makuleke community which is located two hours' drive from Pafuri Camp, but is still impacted by it). All communities described in this thesis are either

directly or indirectly affected by the conservation and ecotourism strategies in their area, while their activities in turn impact on nearby PAs and ecotourism operations.

Defining ecotourism and its relationship to conservation is also contextually important at this stage. There are numerous definitions of ecotourism that have developed over the years (see Blamey, 1997; Ceballos-Lascuráin, 1996; Fennell, 2001, 2008). The term 'ecotourism' was claimed to be originally coined by Ceballos-Lascuráin in 1983. More recently, Fennell (2008, p. 24) has defined ecotourism as "*a sustainable, non-invasive form of nature-based tourism that focuses primarily on learning about nature first-hand, and which is ethically managed to be low-impact, non-consumptive, and locally oriented (control, benefits, scale). It typically occurs in natural areas, and should contribute to the conservation of such areas.*" Fennell's definition of ecotourism as non-consumptive, therefore excludes hunting or fishing as ecotourism options. This is restrictive and leans more towards the protectionist or preservationist viewpoint rather than mere conservation.

In summarising the literature, De Witt, van der Merwe and Saayman (2011, p. 1139) suggest that the key principles of ecotourism are that it should foster a genuine interest in nature, contribute to conservation, respect and conserve local culture, make non-consumptive use of natural resources, yield benefits to the local community, and create tourist awareness of conservation and local community issues. Agrawal and Redford (2006) suggest the following two core criteria; it should generate low visitor impact and help to conserve biodiversity, and it should generate beneficial socio-economic outcomes for local people to help in poverty reduction. Based on these definitions, ecotourism in this thesis is taken to include activities which are nature- and culture-based, sustainable, promote conservation and provide benefits to local people in the area. It is therefore not simply tourism that is based on the sale of access to an interesting natural area, but tourism that also provides benefits to local communities. Since many of the impacts, costs and benefits of tourism are the same as those for ecotourism in the study areas, the two terms are used synonymously throughout the study.

Ecotourism relies on conservation for its success and conservation increasingly depends on ecotourism for its success and survival. Conservation (as opposed to preservation) is the notion that wildlife has to pay its way or disappear and, generally involves sustainable use. Ecotourism offers a way of making such payments. There have been many more studies looking at the impact of conservation on rural communities, rather than ecotourism per se.

These studies are still relevant in that conservation attitudes and impacts can affect the long-term survival of ecotourism as a land use.

1.4. RESEARCH OBJECTIVES

Based on the overview of threats to sustainability discussed above, the main research objectives for this study were:

1) To explore the relationship between rural communities and conservation associated with high-end ecotourism camps spread across six southern African countries.
2) Analyse the role of ecotourism in reducing poverty by increasing real household incomes and opportunities, rather than mere poverty alleviation, focusing on the direct impact of ecotourism labour income on total household income.
3) Provide a thorough analysis of household incomes and the spending patterns of rural households in six southern African countries.
4) Present a comprehensive analysis of factors affecting community attitudes towards tourism and conservation in southern Africa.
5) Develop guidelines and best practices for private sector ecotourism operators engaging with rural communities, based on rigorous statistical analyses and personal observations.

1.5. SCOPE OF THE THESIS

This study includes the impact of ecotourism employment on household incomes and community attitudes towards tourism and conservation in six southern African countries: Botswana, Malawi, Namibia, South Africa, Zambia and Zimbabwe. The study looks only at first-round household expenditures and does not measure the impact of these in the local economy. The comparison in this study is of community members employed in the ecotourism camp (staff) and other community members (non-staff). The study does not compare ecotourism employment with other forms of formal employment in the area. The focus is on ecotourism employment's contribution to household incomes, ecotourism staff's spending patterns compared to other community members and ecotourism employment's impact on community members' attitudes. The study also looks at various other factors impacting community members' attitudes towards tourism and conservation: data is largely disaggregated to emphasise specific country nuances.

1.6. STRUCTURE OF THE THESIS

The thesis is broken into seven independent, but interlinking, chapters. The first four chapters provide background and context for the remainder of the thesis. This chapter has given an introduction and provided context to the research. It has also presented a background to the research problem, as well as presenting the research objectives for the study.

Chapter Two provides the theoretical framework for the research, including the literature review. The review covers biodiversity conservation and poverty in southern Africa and examines the benefits and costs associated with ecotourism as a potential, sustainable land use option in rural Africa.

Chapter Three presents the overall background of each study area: Botswana, Malawi, Namibia, South Africa, Zambia and Zimbabwe; including details in terms of location and conservation history. Readers familiar with the study areas can omit Chapter Three without any loss of understanding. Appendix C is linked to Chapter Three and provides detailed information on the study country backgrounds, including the history of PAs and tourism in each study country.

Chapter Four describes the methods used to collect and analyse the data for this study. A mixed method approach was used, including both qualitative and quantitative data collection and analysis techniques. The chapter also presents the assumptions and limitations of the study.

Chapter Five discusses livelihood diversification strategies in Africa in general and looks specifically at the impact of ecotourism employment on household incomes, using descriptive statistical analysis and regression analysis. It also includes an analysis of livelihood diversification strategies across the six countries and highlights the importance of ecotourism employment in terms of overall household social welfare. Analysis of first-level expenditure patterns provides insight into where the ecotourism dollar goes in rural Africa. As a result of various country differences, the analyses are disaggregated. Overall, the chapter provides a thorough analysis of rural household incomes and expenditures, and ecotourism employment's contributions to these.

Chapter Six provides an assessment of the main factors impacting rural community members' attitudes towards ecotourism and conservation, using Mann-Whitney U tests, Chi-square tests

and Probit models. The analyses are largely disaggregated by country to provide detailed information on specific country nuances. Selected aggregated analysis is also included in order to provide a southern African perspective. An understanding of rural communities, their attitudes and associated behaviours can assist in long-term planning and development. This chapter is, therefore, important in terms of policy and future decision-making relating to ecotourism development and conservation.

Chapter Seven develops best practices for private sector ecotourism engagement with local, rural communities based on the results and analysis from Chapters Two, Four, Five and Six, as well as the author's 15 years of personal experience in ecotourism and rural communities. It defines the role of major stakeholders, including factors to be considered by the private sector when engaging with rural communities, based on the results of the previous chapters and informed by past literature and experience. The chapter also highlights the various policy implications of the research and presents future research ideas.

Overall, this study adds considerably to the existing literature on ecotourism, poverty reduction, rural livelihoods, local communities and local socio-economic development, specifically in rural Africa, but also applicable to other areas across the world, filling numerous information gaps. The inclusion of extensive primary data from six countries provides a comprehensive base for the conclusions drawn in this study and provides important baseline socio-economic data across numerous countries and land management systems that can be used in future analysis.

CHAPTER TWO - LITERATURE REVIEW & THEORETICAL FRAMEWORK

Although the literature on conservation and ecotourism is well established, a survey reveals the gaps this study will fill. It begins by looking at biodiversity conservation and its importance for household livelihoods. The chapter then addresses the role of poverty as a threat to biodiversity conservation in Africa. The arguments for ecotourism as a potential sustainable land use option that can assist in raising household incomes and improving biodiversity conservation are then surveyed. The costs and benefits of ecotourism are presented to provide a fuller understanding of ecotourism as a land use. Readers familiar with the study areas and ecotourism literature can move to section 2.4. without any loss of understanding.

Also pertinent to the analysis in this thesis is a literature review of rural household incomes, livelihood diversification in Africa and community attitudes towards tourism and conservation. These issues are reviewed in Chapters Five and Six which address them directly.

2.1. BIODIVERSITY CONSERVATION

An important aspect of sustainability is biodiversity conservation. Biodiversity is a catch-all word for the variety of life on Earth: the variety of ecosystems and living organisms, including diversity within and between species (International Union for the Conservation of Nature (IUCN), 2012). For the purposes of this thesis it embodies the collection of all naturally occurring species in an area. Turner et al. (2012) describe biodiversity conservation as a fundamental component of sustainable economic development. This view is common and supported by examples from the study areas in this thesis, such as Namibia's conservancy approach and the related socio-economic development (Ashley, 2000; Ashley & Jones, 2001; Jones, 1999a, 2001, 2004a, 2010; Jones & Murphree, 2001; Jones & Weaver, 2009; Snyman, 2012a). However, the direction of causality is not clear: it is not necessarily biodiversity per se that provides the foundation for ecotourism, it is the presence of mega-fauna (the Big Five), of endemism or of spectacular scenery. In such situations, ecotourism apparently supports biodiversity conservation.

Makindi (2010) emphasises the importance of biodiversity in terms of the ecosystem services it provides and supports, as well as the role it plays in meeting human needs. It is argued that

human population growth and various associated activities, e.g. deforestation and overgrazing are, however, speeding up biodiversity loss (McMichael et al., 1999 and Mendes, 1997, both as cited in Makindi, 2010). The author's experience in southern Africa found support for this argument, with extensive land degradation observed in communities in South Africa, Namibia, Malawi and Zimbabwe.

If ecosystem services are lost, people have varying capacities to pay for alternatives. In particular, it is often poor communities who critically depend on ecosystem services for survival and to sustain their livelihoods (Luck, Chan & Fay, 2009, as cited in Turner et al., 2012). In the context of growing rural populations putting pressure on degraded food production systems (FAO, 2003, as cited in Fisher & Christopher, 2007), the importance of recognising that food security in rural Africa may affect and be affected by various biodiversity conservation initiatives is clear (Fisher & Christopher, 2007). The problem arising is that it is frequently communities themselves putting pressure on ecosystems; they are trading off income against ecosystem services.

Kepe et al. (2005) highlight that as biodiversity includes the natural resource base upon which people depend, measures to conserve biodiversity have implications for virtually all economic activities. Biodiversity provides opportunities for commercial development, as well as critical ecological services (pollination, climate regulation) essential for survival. The overall observed dependence of people on various ecosystem functions, as well as on the medicinal and nutritional aspects of the environment, indicates a heavy reliance on the environment for overall survival. Improved biodiversity conservation resulting from conservation and ecotourism, as opposed to degrading land through intensive agriculture or mining, can, therefore, help contribute to more healthy ecosystem functioning. This ensures that the environment is more resilient to shocks, e.g. droughts, floods, which will also reduce the impact of such shocks on local communities (Raufflet et al., 2008).

Other than the Namibian conservancy approach already discussed, other forms of conservation in the study areas included wildlife or game management areas (W/GMAs). These exist in Botswana and Zambia and include different uses for the land; photographic ecotourism, hunting or a combination of the two. Some WMAs have communities living within them and continuing with traditional lifestyles, albeit often with restrictions on activities such as collecting fruits, plants and wood, and hunting animals.

In some of the study areas addressed in this thesis (Malawi, South Africa and Zimbabwe) the National Parks system predominates. This is largely still part of the old 'fortress conservation' concept, though the focus has recently changed, including a more community-oriented approach. For example, South African National Parks (SANParks) has, in the last two decades, moved towards a new concept of conservation based on inclusivity and linking conservation to human needs (Snyman, 2009). These different approaches to conservation influence the benefits and costs accruing to local communities living in and around these areas, as do the different approaches to ecotourism (discussed in Spenceley and Snyman (2012) and expanded on in Appendix A).

Overall, a reciprocal relationship exists between biodiversity conservation and ecotourism. The future survival of rural households is concomitantly linked to biodiversity conservation and sustainable land use, often with a direct link between rural livelihoods (discussed in Chapter Five) and conservation. As observed by the author while conducting the interviews and also highlighted by McNeely et al. (2006) some rural livelihoods are compatible with conservation objectives, and some are detrimental; the former need encourgagement and the latter need alternative approaches.

2.2. POVERTY AND THE ENVIRONMENT

From a conservation perspective, poverty can be a problem. Walpole & Wilder (2008) suggest that reducing poverty in rural areas can help reduce pressure on biodiversity by reducing the need for unsustainable use, providing opportunities for alternative livelihoods, and by placing people in a position where they can choose to conserve.

Economic conventions on conservation often argued that, traditionally, poor people could not afford to be conservationists. The poor have a high discount rate. They are hungry now. Promising a higher return for deferring present consumption will only reap a reward if the person can survive to collect the future return, or is satisfied that their children will reap the return. Farquharson (1992, as cited in Wall, 1997, p. 489) put it succinctly; "*people with empty stomachs are not much interested in respecting environmental regulations.*"

Poverty is multi-dimensional, with its roots in political, social and economic processes (see for example Jones, 2004a, p. 10). Any definition of poverty is going to be controversial. Some approaches define poverty in terms of income and expenditures/consumption, while others include concepts such as living standards, basic needs, the human development index

and inequality (Spenceley & Goodwin, 2007; Spenceley, 2008b). The World Bank has adopted $1.25 a day as the global baseline for defining extreme poverty. Recent figures suggest that, globally, 1.4 billion people live beneath this threshold, whilst a total of 2.6 billion people (38.4% of the world's total population) live on less than $2 a day (World Bank, 2008). The key point is that approaches to poverty use the term in one of two basic ways; absolute poverty (being hungry when one goes to bed) or relative poverty (my neighbour has two televisions and I only have one). In this study it is absolute poverty we are concerned about, though relative poverty too can have impacts on resource management.

Household poverty involves a number of social and economic dimensions, which are usually interconnected. A household's access to assets (including human, natural, physical, financial and social assets) will affect their ability to reduce poverty (World Bank, 2001). Other factors include access to income, opportunities to engage in productive activities, empowerment and inclusion in decision-making processes and governance systems, resilience against natural disasters and economic shocks, and the capacity to promote and defend community interests (Scherl et al., 2004, p. 15). Beyond the control of the individual household, there are also numerous factors impacting on household livelihoods and poverty levels including, exposure to world markets, natural disasters (droughts or floods), war and unrest, climate change, human-wildlife conflict (HWC) and poor governance (Vedeld, Jumane, Wapalila & Songorwa, 2012).

The overall contestation of the notion of poverty makes the issue of poverty alleviation and reduction subjective. Despite this, some strong views have been expressed; for example Dewdney (1996:64, as cited in Jones, 2004a, p. 13) defines poverty reduction as "*The long-term decline in the incidence of poverty as a result of an increase in the ability of poor households to help themselves, through increasing subsistence output or gaining employment."* And he (Dewdney, 1996:64, as cited in Jones, 2004a, p. 13) defines poverty alleviation as "*The short-term relief from the symptoms of poverty, often by the State through transfer payments but also – and especially in developing countries – through NGOs, donors and community self-help mechanisms."* According to Dewdney's definition, ecotourism employment can, therefore, assist in poverty reduction.

In some cases, there will be an immediate need for poverty alleviation in order to save lives, but strategies should largely aim for poverty reduction and long-term solutions. Ultimately, as highlighted by Jones (2004a), development strategies should aim to deal with the root

causes of poverty and develop ways to lift people out of poverty for the long term. Spenceley (2003) made the point that the long-term economic sustainability of tourism in Africa will depend on its ability to lift local people out of poverty.

Certainly, there is a real need to tackle poverty in rural areas in Africa. Secure livelihoods and linking communities to biodiversity conservation are important components in poverty reduction (McNeely et al., 2006). A possible way to do this is through ecotourism.

Given the consensus in the literature, this thesis begins with the premise that ecotourism has the potential, if managed correctly, to positively affect a number of poverty-related factors, including asset and income accumulation, empowerment, involvement in governance, reducing vulnerability, increasing social networks, the promotion of community interests and capacity-building through skills development and the promotion of cultural tourism activities in remote areas.

2.3. ECOTOURISM AS A POSSIBLE SOLUTION

Ecotourism in Africa has, to some extent, traditionally been 'enclave tourism.' The problem is that it has been concentrated in remote areas where the location and types of facilities fail to consider the needs and wishes of surrounding communities (Ceballos-Lascurain, 1996). Such facilities are often characterised by foreign ownership and designed to meet the needs and interests of foreign tourists (Mbaiwa, 2003). 'Foreign ownership' in Mbaiwa's statement largely implied 'non-Botswanan, white ownership.' There has however been a move towards a more inclusive form of ecotourism which includes local communities. Text Box 1 describes two different approaches to involving local communities in ecotourism.

Text Box 1: Pro-Poor Tourism (PPT) and Corporate Social Responsibility (CSR)

Recent years have seen the increasing popularity of references to pro-poor tourism (PPT) and corporate social responsibility (CSR) in public pronouncements about tourism. This is not a different form of tourism, but rather a different approach to tourism (Ashley & Haysom, 2006; DFID, 1999) and is applicable to all forms of tourism. PPT is defined as "*tourism that generates net benefits for the poor and aims to ensure that tourism growth contributes to poverty reduction" (*Ashley et al., 2001; Spenceley et al., 2010:647).

Although PPT specifically aims at increasing positive impacts on the poor, the non-poor may also benefit. PPT strategies focus on expanding the benefits of tourism to the poor, rather than on actually expanding the overall size of the tourism market (DFID, 1999).

Ashley and Haysom (2006, p. 269) argue that PPT can also provide real benefits to a business including; social legitimacy, enhanced corporate governance and staff morale, greater customer satisfaction and market appeal, improved government procurement and recognition, access to responsible financing, and potential cost savings.

However, they also warn of key challenges/requirements for PPT (Ashley & Haysom, 2006, p. 275) including; designation of a champion, time and transaction inputs and costs, the necessity of staff buy-in, attitude change inherent in the process, management of expectations, the importance of finding the right partners in the community, and setting short term transaction costs against longer-term benefits.

CSR, on the other hand, is a company policy of assisting the poor, which can, if managed and implemented correctly, also bring significant benefits to the business, including marketing promotion, improved staff morale, and public good will (Loza, 2004). PPT involves internal change, whereas CSR is usually by external action (Ashley & Haysom, 2006).

Ecotourism is frequently put forward as a tool for conservation and sustainable development (Ceballos-Lascuráin, 1998, as cited in Tsaur, Lin & Lin, 2006; Koelble, 2011). Despite reducing risk for local communities through incomes earned, ecotourism has its own risks, some potentially more problematic than agriculture's; for example, sensitivity to exchange rates and the oil price, natural disasters, politics and health scares, all of which can destroy ecotourism in an area.

High-end ecotourism, specifically, can be a volatile and risky business venture characterised by a high degree of sensitivity to market fluctuations, whether financial or political, a highly competitive market, high capital requirements and fixed costs as well as high maintenance costs (Spenceley, 2006). There is also a requirement for regular, predictable, and high quality wildlife-viewing, which can often be highly seasonal (Spenceley, 2006). The importance of biodiversity conservation discussed earlier is important in this regard.

The importance of diversifying rural livelihoods cannot be overstated. It is important for rural households' long-term survival and sustainability that they do not 'put all their eggs in one basket' by relying solely on ecotourism for support, but that they continue with other

livelihood options. There are, therefore, two issues present; a) that ecotourism offers a means to diversify livelihoods, and b) that households should not shift completely from agriculture to ecotourism, but should spread risk between the two.

Overall, ecotourism's promised employment and income impact, positive social welfare impacts and limited impacts on the environment, give it the potential to offer a viable and sustainable land use alternative in many remote rural areas (Mitchell & Ashley, 2010).

2.3.1. THE ECONOMIC VALUE OF ECOTOURISM

Valuing the impact of PAs[2] and effective communication of the benefits that can be derived from them are important in securing support for establishing and maintaining such areas. To date, there have been no effective systems for measuring the value of natural capital, PAs, and tourism's full impact. It is important that national accounting practices are instituted to ensure that the true values of PAs and tourism are measured and that policymakers make decisions based on this valuation. In this section we look only at measuring tourism's impact.

The recent introduction of Tourism Satellite Accounts (TSAs) in various countries provides a more accurate value of the tourism sector in the national accounts. Tourism indirectly impacts numerous other industries, including the manufacturing and supply of goods and services such as food, alcohol, linen, and toiletries, resulting in extensive multipliers (see Saayman, Rossouw and Krugwell (2012b) for a recent study of the impacts of the Kruger National Park in South Africa). In Senegal, the indirect jobs created by tourism are estimated to be one and a half times the direct jobs: 18 000 indirect jobs compared with 12 000 direct jobs (Crompton and Christie, 2003, as cited in Mitchell and Ashley, 2010). TSAs allow for the integration of these impacts into national accounting.

The main aim of TSAs is to define a larger and more realistic tourism sector, which combines a demand-based definition (i.e. what visitors spend their money on) with a supply-focused definition (expenditure by tourism companies on goods and services from the supply chain on behalf of tourists) and through this, to demonstrate to governments the importance of the tourism economy (Mitchell and Ashley, 2010). Input-output tables are also frequently used to build a broader picture of the tourism economy, by measuring inter-sector linkages between the direct tourism industry and the 'rest of the economy' (Mitchell & Ashley, 2010). Mitchell

[2] Various methods can be used, including contigent valuation, choice modelling, travel cost method, hedonic pricing and willingness to pay (see Perman, Ma, McGilvray & Common, 2003).

and Ashley (2010) found that the broad picture emerging from data across Africa was that the indirect inter-sectoral linkages are likely to boost the economic impacts of tourism by more than 50% on top of the direct impacts. The same applies to tourism employees spending their wages. This can create new income-earning opportunities for poor people, just as the tourism supply chain can (Mitchell & Ashley, 2010).

In 2011, the World Travel and Tourism Council (WTTC) anticipated that the direct contribution of travel and tourism[3] to GDP in sub-Saharan Africa would be USD39.7 billion (or 3.1% of combined regional GDPs) and the direct employment contribution was expected to be 4 763 000 jobs (2.3% of total employment).

Due to the diversity of industries tied to tourism including, accommodation, transport, food, beverages, health, informal sector, etc., its total contribution to an economy is difficult to measure accurately. As a result, the figures above and in Table 1 may have been exaggerated by double counting; this is important to bear in mind when assessing figures produced by people with a vested interest in tourism. Clearly, however, the contribution is important and noteworthy, and the development of the tourism sector has the potential to assist sub-Saharan African countries in reducing poverty, increasing foreign exchange earnings, and improving local development and social welfare. Along with the positives associated with this growth in the tourism industry are possible negative impacts; environmentally, socially and culturally (Saarinen, Becker, Manwa & Wilson, 2009). These will be discussed further in section 2.3.2.2 on page 24 of this chapter.

Table 1 presents a breakdown of the direct contribution of travel and tourism (adapted from the WTTC figures) to the study countries in terms of GDP and employment.

[3] Calculated using methodology that is fully consistent with the UN Statistics Division-approved *2008 Tourism Satellite Account: Recommended Methodological Framework* (TSA:RMF 2008) (WTTC, 2011).

Table 1: Breakdown of the direct contribution of travel and tourism to the study countries in terms of employment and GDP (2011)

Country	% direct contribution of tourism to GDP in 2011	The direct contribution of travel & tourism to GDP, including its wider economic impacts	% direct contribution of tourism to employment in 2011	The direct contribution of travel & tourism to employment, including jobs indirectly supported by the industry
Botswana	2.5%	BWP 3124.5mn	3.5%	21 000 jobs
Malawi	3.7%	MWK 38 945.2mn	3.1%	95 000 jobs
Namibia	4.7%	NAD 3820.1mn	7.4%	32 000 jobs
South Africa	5%	ZAR 143.5bn	4.5%	594 000 jobs
Zambia	2.3%	ZMK 2 000.6bn	1.4%	22 000 jobs
Zimbabwe	3.6%	N/A*	2.6%	26 000 jobs

* The figure in the WTTC report was in Zimbabwe dollars, which are no longer in circulation.
Source: Adapted from WTTC (2011)

2.3.2. THE ECONOMICS OF ECOTOURISM

The system described in this thesis is one in which the state is obligated to set aside some proportion of the nation's surface area for conservation purposes. They wish to do this as cost effectively as possible, maximising social and economic benefits relative to the social and economic costs incurred. One approach is to involve the state as land-owner in public-private partnerships (discussed in Spenceley & Snyman (2012) and Appendix A). Another is to involve local residents in similar arrangements, this time merely restricting the range of activities they can engage in (to exclude any with negative externalities, such as deforestation), and in this approach they try to facilitate various forms of ecotourism. This section will look at the various benefits and costs that can flow from this approach.

The benefits of ecotourism are not unambiguously positive, though some authors (Lapeyre, 2011b) have argued that it can be a 'solution' in rural areas as it helps achieve the triple bottom line of sustainability:

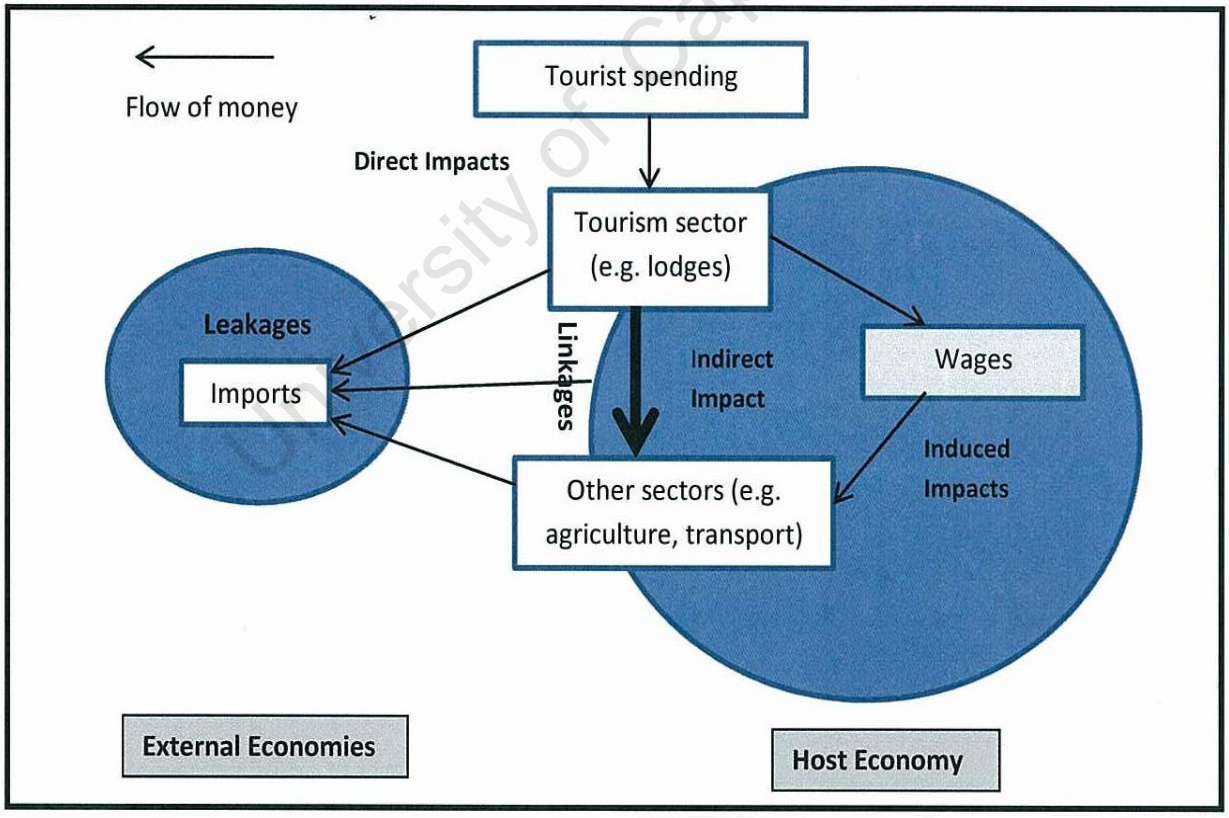
i) it creates full-time, as well as casual, seasonal and contract employment and therefore income opportunities for poor households in remote, rural areas (economic sustainability);
ii) it encourages individual and, in some cases, collective local empowerment through skills training and development and the sharing of decision-making (social sustainability);
iii) it generates income for both the community as a whole, and for individuals, that can be used to support conservation costs as well to encourage positive conservation behaviours (environmental sustainability).

One area of difficulty for ecotourism development is to balance all the costs and benefits of such development. Frechtling (1994) emphasised the need to consider opportunity costs, i.e. the returns on the highest-value alternative resource use should be subtracted from the net benefits of tourism to obtain its true economic benefit to the economy.

Naturally, the social, political, environmental and economic context of an area will influence the impacts of tourism. Telfer & Sharpley (2008) stress that what is positive in one area, may not be in another (for example, an increase in tourist numbers in a city may have a positive impact through increased revenues with no negative impacts, but a similar increase in tourist numbers to an ecologically-sensitive site in the Okavango Delta may increase revenues, but have a negative impact environmentally).

Figure 1 illustrates a simplified flow of tourism income and the various impacts (direct, indirect and induced) that this can have on the local/national economy.

Figure 1: Flow of tourism income and the various impacts of this on the local economy



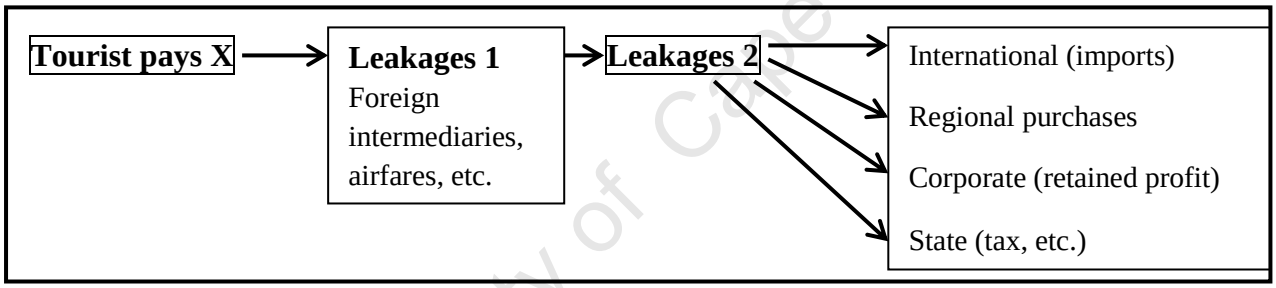
Source: Meyer (2008, p. 563)

Though ecotourism may be an unreliable source of income for rural households, especially in marginal economies, by supplementing incomes derived in other ways, it can help disperse risk (Tao & Wall, 2009). Additionally, ecotourism employees spending their salaries buying

goods and services from other community members spreads tourism's benefits beyond simple direct employment. In Lepp's (2007, p. 881) study in Uganda, 'an elderly man, still farming, explained "*when those people get money from tourism so do we because they buy food from us"* (Mzee Isabirye, 2003, personal communication).' Similarly, many respondents in the present study mentioned that ecotourism staff spending their income in the villages benefitted them and their households.

There has been much debate regarding the 'leakage' from tourism operations in rural areas. Meyer (2008, p. 561) defines leakage as the percentage of the price of a holiday paid by tourists that either leaves the destination in payment for imports or as expatriated profits, or that never reaches the destination due to the involvement of foreign intermediaries. Leakages can be identified and measured by assessing the supply of goods and services that are being imported to fill market needs and, from there, looking for local alternatives (see Figure 2).

Figure 2: Leakages from tourism



Sandbrook (2010) however argues that although there was a considerable amount of leakage from his Ugandan study sites in villages around Bwindi Impenetrable Forest, the retained revenue was still greater than all other sources of revenue to the area combined. He therefore argues that the knock-on effects of tourism, in the local context, can be highly significant despite considerable leakage. It is the author's opinion that the same holds true for all sites in this study, with the exception of the Pafuri/Makuleke community study site, where other sources of income (e.g. mining, remittances, government grants) play a significant role in the local economy.

Various positive and negative impacts of ecotourism, including the economic, environmental and socio-cultural impacts, will now be analysed. These impacts are both individual and collective. Table 2 highlights some of these potential impacts found in the literature and observed by the author. It is important to note that development via ecotourism is one of a number of development pathways for communities and the impacts discussed here do not consider the counterfactuals (having no ecotourism).

Table 2: Potential positive and negative impacts of ecotourism

Positive Impacts/Benefits of Ecotourism	Description	Reference
Socio-economic	Provision of staff accommodation, food, pensions, medical aid	Pers. obs. author
	Strengthening of local institutions through community involvement	Stronza & Pêgas, 2008
	Catalyst for collective action for resource management	Snyman, 2012a; Stronza & Pêgas, 2008
	Building capacity and empowering communities	Boggs, 2000
	Skills training and development	Pers. obs. author
	Enhancing livelihood security	Pers. obs. author
	Six avenues through which local people can benefit financially from ecotourism: employment and wages; sale of fruits and vegetables; direct income from joint ventures; revenue from cultural tourism excursions; sale of crafts and philanthropic donations	Spenceley, 2010:651
	An advantage of public-private partnerships is that private sector provision of lodges often extends to the maintenance of roads, water pumps, etc., which then saves public sector money	Pers. obs. author
	Ecotourist philanthropic donations can be targeted to compensate for areas where public funds are spent on tourist infrastructure rather than schools or clinics.	Pers. obs. author
	Macro-economic benefits: contribution to balance of payments and foreign exchange earnings, backward linkages, employment generation, income generation through supply of goods and services	Andereck, Valentine, Knopf & Vogt, 2005; Mitchell & Ashley, 2010; Telfer & Sharpley, 2008; Weinberg, Bellows & Ekster, 2002
Socio-cultural	Build confidence, self-esteem and pride in one's self and one's community	Personal observations of author from working in high-end ecotourism and noting interactions between staff and guests
	Visitors may internalise local fashions in clothing, art, music; gain a greater awareness and acceptance of other cultures; adoption, even if only temporarily, of new cultural practices	Telfer & Sharpley, 2008:198
	Enhance cultural aspects of an area, through continued interest in local, cultural and historical lifestyles, and through the promotion of cultural activities and values and their inclusion in the ecotourism product	Pers. obs. author
	Lessen the out-migration of youth to urban areas, and thereby assist in keeping rural families together	Snyman, 2012c
Environmental	Encouraging environmental/sustainable practices as well as increasing the number or size of PAs	Telfer & Sharpley, 2008:186
	Reduction in natural resource use by local communities with alternative livelihoods (ecotourism employment)	Pers. obs. author
Negative Impacts/Costs of Ecotourism		
Socio-economic	Opportunity costs, where resources are used for ecotourism that could have been put to another use, e.g. agriculture, livestock farming	Arntzen, Setlhogile & Barnes, 2007
	Increased vulnerability due to reliance/dependency on ecotourism	Telfer & Sharpley, 2008
	Inflationary impacts	Andereck et al., 2005; Eagles, McCool & Haynes, 2002;

		Frechtling, 1994; Telfer & Sharpley, 2008; Weinberg et al., 2002
	Unmet expectations when project proposers overstate future financial benefits	Fabricius et al., 2001
	Public funds spent on providing tourist facilities are funds that could otherwise be spent on health, education and other facilities for the local population	Akeampong, 2011
	Rural communities often have to wait an extended period to receive benefits or meaningful tourism-related income, resulting in disillusionment	Magome & Fabricius, 2004; pers. obs by the author in Botswana and South Africa
Socio-cultural	Disruptions to daily life by tourists	Bith, 2011; Entus, 2002 as cited in Cater, 2006; Frechtling, 1994; Moscardo, 2008 as cited in Stronza, 2010:58
	New and unevenly distributed benefits for people in the same community	
	Changes in value systems and new forms of social hierarchy	
	Potential for internal conflict and corruption	
	In-migration as people come in search of work	Frechtling, 1994
	Increased pressure on health and education facilities if population increases	Frechtling, 1994
	Can reduce time people have for other important household activities, e.g. looking after family members and herding livestock	Ashley et al., 2001; Jones, 2004 as cited in Arntzen et al., 2007:12
	Fragmentation of culture: prostitution, crime, Western influence on local language and dress, erosion of traditions, changes to local music and art, architecture and family relationships	Bith, 2011; Fennell, 2008:48; Andereck et al., 2005; Mbaiwa, 2003; Telfer & Sharpley, 2008
	'Demonstration effect', where locals copy the behaviour of tourists or where their welfare is reduced when they are exposed to new products which they cannot afford	Pers. obs. author
	Marginalisation of locals to menial, less important jobs	Eagles et al., 2002
	Loss or misuse of cultural artefacts, art or sites	
	Perceptions of cultural exploitation or commoditisation of culture	
	Suspicion between community members, tensions, hostility, segregation	Personal observation by the author in Botswana
	Visitors may also suffer consequences of increasing tourism when local communities take advantage of tourists through over-pricing or goods or services; becoming victims of crime or health problems	Stronza, 2001 in Fennell, 2008
	Increased tourism may lead to begging by local people	Jones, 1999a and observed by the author in Botswana, Malawi and Zimbabwe.
Environmental	Creation of illegal roads in PAs	Andereck et al., 2005; Arntzen, 2006; Mbaiwa, 2003, 2005b; Telfer & Sharpley, 2008
	Noise and light pollution	
	Destroying vegetation	
	Generation of solid waste	
	Permanent environmental restructuring	
	Impacts on sanitation and water systems	
	Can result in an acceleration of extraction of natural resources, by expanding number of users or increasing revenues for new technologies to use resources	Stronza, 2010:58

Sections 2.3.2.1 to 2.3.2.5 elaborate on some of the points in Table 2.

2.3.2.1. GENERAL BENEFITS/POSITIVE IMPACTS OF ECOTOURISM

Eagles et al. (2002) break down the potential benefits of ecotourism into three major categories; enhancing economic opportunity, protecting natural and cultural heritage, and enhancing quality of life. These represent the three areas of sustainability; economic, social and environmental. Benefits can be direct or indirect, with the former typically being financial.

Ecotourism employment may be permanent, part-time, casual or seasonal. Employment need not mean workers have to abandon existing livelihoods. For those employed part-time the reason is obvious, but it is true for permanent employees too. It was noted that some of the permanent employees interviewed continued with historic livelihood activities when on leave, or employed others to manage their activities when they were away working in ecotourism, allowing them to spread risk.

2.3.2.2. GENERAL COSTS/NEGATIVE IMPACTS OF ECOTOURISM

Despite its supporters often stressing ecotourism's benefits, a number of costs are commonly associated with it (see Text Box 2 on page 25). In the course of this research it was noted that these negative impacts tended to be most common when population densities were high and the opportunity costs of setting aside land for conservation were accordingly great.

The issue of choice is central to the ecotourism debate. It is important therefore to differentiate between constraints on land use imposed on communities, and those entered into voluntarily. An observation of the author (earlier made by Eagles et al., 2002) is that negative impacts of tourism tend to be more common when communities are not given choices, i.e. when they have no control over their involvement in the ecotourism activities; this can be mitigated when local communities are involved in the planning and management of ecotourism in their area (see Snyman, 2012a and Chapters Six and Seven).

Prospect theory and loss aversion (Kahneman & Tversky, 1979) suggest that the negative aspects of ecotourism may be more obvious to local residents and they may wish therefore to avoid these more than to receive benefits, since some of the benefits derived from the environment appear as free goods and may therefore go unnoticed. The costs however, which appear intermittently, are likely to be more direct and therefore obvious to households. This can threaten community acceptance of conservation. As an example, incidents of human-wildlife conflict (HWC) (see Figure 3) and their direct impacts on

households' livelihoods and welfare are more likely to be strongly remembered by households, irrespective of whether or not they are concurrently receiving benefits from PAs through ecotourism.

Text Box 2: Case study: Risks associated with ecotourism; closure of an ecotourism camp

As discussed throughout this thesis, ecotourism can provide numerous positive socio-economic benefits, but it is important to bear in mind the potential negative impacts if a camp closes down. Due to an inability to reach an agreement with the Ministry of Environment and Tourism (MET) in Namibia, Wilderness Safaris (WS) was forced to close down Skeleton Coast Camp in 2012. Ecotourism was one of the only forms of formal employment in the area and WS's voluntary community levy payments to four conservancies in the area provided much-needed funding to these conservancies. The closure of the camp thus resulted in a loss of jobs (though many staff were accommodated in other WS camps in Namibia), loss of alternative livelihoods (including the sale of crafts to tourists in the villages) and loss of income to MET from lease fees, and to the conservancies from community levies; all of these impacted on household incomes and livelihoods. It is, therefore, important to keep in mind the potential negative impacts on remote, rural communities that may result if ecotourism is no longer an option.

It was observed that ecotourism may widen the gap between the local affluent and the poor, as ecotourism staff frequently appeared to have an elevated 'social standing' as a result of increased household wealth. This was however also impacted by the fact that they were, often, more educated (illustrated in Appendix F) and therefore likely to have enhanced 'social standing' in any case. Despite this potential increase in income inequality and relative poverty, it does not increase absolute poverty among those who do not have a tourism-related job. It can, in fact, reduce absolute poverty through the tourism-employed spending their salaries in rural areas, as well as employing those not employed in tourism to work in their fields and households.

Another cost may be an influx of people seeking employment in tourism. Wittemeyr, Elsen, Bean, Coleman, Burton and Brashares (2008) claimed there was overwhelming evidence of increased human population growth near PAs, increasing the pressure on natural resources and the availability of land. These points have since been challenged by Joppa, Loanie and Pimm (2009:1) who questioned Wittemeyr et al.'s (2008) overall methodology and argue that PAs may experience unusual population pressures near their edges, but they claim there is no evidence of a general pattern of disproportionate population growth near PAs in Africa or South America.

According to the United Kingdom (UK)'s Department for International Development (DFID, 1999) many of the negative impacts ascribed to ecotourism are consequences of globalisation and would occur, to a certain extent, anyway. While this view is supported by observations made during this research, it is plausible that growth in the ecotourism industry may be speeding up the process.

Figure 3: Potential human-wildlife conflict: Elephant in Zambian village

Photo: Susan Snyman, 2010

2.3.2.3. ENVIRONMENTAL IMPACTS OF ECOTOURISM

In addressing potential environmental problems, Andereck et al. (2005) suggest that local development policy focus as much on the environment as on meeting the needs of the tourism industry. It is not clear that such a strong stance is warranted; negative environmental impacts undermine the viability of the ecotourism business. For this reason ecotourism, as opposed to alternative land uses such as mining and agriculture, is often self-regulating. Many ecotourism businesses adhere to environmental minimum standards and follow sustainability reporting standards (such as King III, see Wilderness Holdings, 2012) to ensure that negative environmental impacts are mitigated as much as possible. Another aspect to be considered is that of carrying capacity. With wildlife it is more difficult to measure carrying capacity as: a) wildlife feed differently, at different heights and b) the use of large/small stock units, etc. becomes more difficult as wildlife are different sizes.

Increases in wildlife numbers, and therefore increased pressure on resources, resulting from conservation through ecotourism should however be kept in mind.

2.3.2.4. SOCIO-ECONOMIC IMPACTS OF ECOTOURISM

This thesis focuses on a number of the positive socio-economic impacts of ecotourism, but it is important to keep in mind that there are negative socio-economic impacts (see Table 2) that need to be mitigated wherever possible.

2.3.2.5. SOCIO-CULTURAL IMPACTS OF ECOTOURISM

Over and above the environmental and economic costs and benefits of ecotourism, which are frequently debated, there are also important socio-cultural impacts. Telfer and Sharpley (2008, p. 195) distinguish between social and cultural impacts. They define social impacts as the more immediate effects of ecotourism on local people and their lifestyles, and cultural impacts as longer term changes occurring in the context of social values, attitudes and behaviours. Socio-cultural changes are not necessarily always negative, as some local practices may themselves have been problematic.

In southern Africa, this debate peaked with concerns over the cultural conditions of San/Bushmen communities in Botswana. There has been some debate about the duties of the state; should communities be left to evolve voluntarily or should the state intervene to accelerate the process? This recently (2011) played out in the high court of Botswana in the controversy over San presence in the Central Kalahari National Park (Centre for Human Rights, 2011). Ironically, ecotourism wants to show tourists the real society, but has to accept that doing so imposes change, which may be good or bad.

Problems relating to suspicion and tension within communities can cause problems in once peaceful, rural villages that have no mechanisms or skills to deal with such conflict. This was evidenced by the author, particularly in communities where there were Community Trusts. The power held by those in the Trust frequently caused tensions in the community, sometimes developing to levels of hostility. Uneducated community members frequently mentioned their sense of exclusion from the tourism process and its benefits.

The threat that ecotourism poses to local communities' 'ways of life' makes it difficult to find a balance offering an authentic and educational tourist experience that is not degrading and does not erode traditional culture and values. For example, many of the formerly semi-

nomadic Himba in the north-west of Namibia now have more permanent residences in areas where there are tourists, supplementing their income by selling curios/crafts and having tourists visit their traditional households (author's pers. obs., 2009; Jones, 1999a). The change means that they no longer move their cattle between homes, which could accelerate land degradation in these dry areas and possibly lead to livestock losses.

In general, local communities respond to ecotourism development and tourists in a variety of different ways, usually determined by the local culture and values. Telfer & Sharpley (2008:198) emphasise other factors that can determine local communities' responses. These include:

- the nature and scale of the particular ecotourism development;
- the particular structure/ownership of the ecotourism industry;
- the stage of development/maturity of the ecotourism industry; and
- the degree of involvement or benefits that the individual receives from ecotourism.

It is clear that tourism can impose profound costs and benefits on local communities. The policy implication is simple; tourism is becoming an increasingly complex phenomenon, with political, economic, social, cultural, educational, ecological, psychological and aesthetic dimensions and in rural areas, tourism's sustainability will require it to provide benefits to communities as a means of motivating and enabling them to care for and maintain their natural and cultural heritage.

2.4. CONTRIBUTIONS OF THE RESEARCH TO THE DISCIPLINE

To date, no study has attempted to determine the direct impacts of ecotourism on rural household incomes and welfare[4] or to examine the various factors impacting community attitudes towards tourism and conservation across six countries. Though numerous studies have looked at the socio-economic impacts of tourism on various communities or countries, these have largely addressed it in terms of contribution to GDP or to community funds/trusts (Mbaiwa, 2008; Spenceley, 2008b; Turpie et al., 2006). Numerous studies have looked at community attitudes towards tourism and conservation in Africa (Anthony, 2007; Chidakel, 2011; Currie, 2001; de Boer & Baquete, 1998; Emptaz-Collomb, 2009; Groom & Harris, 2008; Kideghesho et al., 2007; Larson, 2010; Naughton-Treves & Treves, 2005; Newmark, Manyanza, Gamassa & Sariko, 1994; Romañach, Lindsey & Woodroffe, 2007; Sifuna, 2010;

[4] Welfare is defined in this thesis as the overall social and economic situation of the household, including the number of household assets, livestock, income available for saving, etc.

Shibia, 2010; Teye, Sönmez & Sirakaya, 2002; Tessema, Ashenafi, Lilieholm & Leader-Williams, 2007; Weladji, Moe & Vedeld, 2003), but no study has analysed comparable data across six southern African countries.

Determining the direct impact of ecotourism employment on household incomes is important in understanding ecotourism's impact on rural communities and assessing whether or not it does, or can, offer a solution to socio-economic problems. This determines whether ecotourism, and its associated employment, is likely to improve social welfare through diversifying rural livelihoods and reducing the risks faced by rural households.

Sharpley & Naidoo (2010, p. 146) stress that while there has been extensive literature on the economic consequences of tourism development in general, few academic studies have explored the mechanics of tourism's impacts on poverty. Rogerson (2006, p. 49) also emphasised this; "*at present only limited material is available concerning the local-level impacts of tourism on poverty alleviation."* Spenceley (2008a) looked at the impact of wildlife tourism on rural livelihoods in Namibia, Botswana, South Africa, Zimbabwe and Zambia in terms of overall revenues earned from wildlife tourism, not in terms of the direct impact on household income.

Numerous scholars (Jones, 2004a; Simelane, Kerley & Knight, 2006; Spenceley, 2008b, Stronza & Gordillo, 2008) have also called for more comprehensive socio-economic studies on the relationship between conservation and communities. This thesis illustrates that local communities face real problems associated with conservation and that the private sector faces real problems when dealing with communities. It is important for the sustainability of conservation efforts that these problems are acknowledged, understood and wherever possible, mitigated. It will be shown that a concomitant receipt of benefits from conservation, through ecotourism, can assist in resolving these problems.

Spenceley (2008a, p. 180) has pointed out that "*Research on the economic impacts of wildlife tourism is patchy across southern Africa: in terms of geographical location, number of studies and the type of information reported."* The present study aims to fill this gap by providing a consistent analysis across southern Africa, using commensurable data, and providing a comprehensive socio-economic study of rural communities and their relationship to conservation and ecotourism.

Muganda, Sahli and Smith (2010) went further and criticised the fact that few researchers have incorporated the relationship between tourism development and poverty alleviation into their research. Although some writers have attempted to redress this issue (Ashley, 2000; Ashley et al., 2001; Ashley & Roe, 2002; Ashley & Mitchell, 2005; Mitchell & Ashley, 2010; Reid, 2001; Zhao & Brent Ritchie, 2007) it remains a major shortcoming and needs to be addressed if tourism development is to play a significant role in the alleviation of poverty and related socio-economic development. Goodwin & Santilli (2009:9) also found limited research into the effectiveness of using tourism to deliver economic development and conservation objectives (e.g. Bookbinder, Dinerstein, Rijal, Cauley & Rajouria, 1998; Lepp, 2007; Shibia, 2010; Walpole & Goodwin, 2001). Akama & Kieti (2007) highlight the lack of individual household income data relating to ecotourism and CBNRM in rural Africa. This lack makes it difficult to assess its impact on rural households and the poverty levels of individual households. This thesis will illustrate that, to a large extent, ecotourism is important for socio-economic development in developing countries, but it is not a panacea, and it is important not to exaggerate the benefits or opportunities it can bring, but rather to incorporate it as part of a package of sustainable development options.

In summary, the study aims to fill the abovementioned gaps in the literature and to increase the understanding of the role played by high-end ecotourism employment in poverty reduction in rural areas. The ability of such job creation to increase communities' understanding and appreciation of conservation and tourism will also be explored. Ecotourism is one of few income-generating activities in many rural areas, making it important to research and fully understand ecotourism in the rural context. The foundation of the research is a dataset collected from over 1800 households in six different countries. Taken over the six countries it provides the baseline of demographic, socio-economic and attitudinal data in conservation-affected rural communities (which Jones (2004a) identified as important). As Spenceley & Meyer (2012, p. 306) point out, this type of analysis (Snyman, 2012c) is important because rather than tackling only individual enterprises, it presents a broad-scale evaluation of the increasingly internationalised business approach to ecotourism.

CHAPTER THREE - BACKGROUND TO THE STUDY AREAS

The six countries in this study have used a variety of approaches to natural resource management over the past 50 years. Appendix C briefly describes these approaches, as well as a background to tourism in each country, while this chapter presents a short background to each specific study area. Readers familiar with the study areas can move to Chapter Four without loss of understanding.

Initially, the centralisation of control over wildlife resources and the consequent establishment of PAs frequently resulted in the displacement of local communities from their traditional villages and denial of access to the natural resources on which they traditionally relied (Adams & Infield, 2003; Bajracharya, Furley & Newton, 2006; Barrow & Fabricius, 2002; Barrow & Murphree, 2001; Borrini-Feyerabend et al., 2004; Brockington & Igoe, 2006; Gurung, 1995, as cited in Weladji & Tchamba, 2003; Igoe, 2006; Kepe et al., 2005; Kideghesho et al., 2007; Makindi, 2010; Mbaiwa, 2005c; Nepal, 2002a; Scanlon & Kull, 2009; Steenkamp & Uhr, 2000; Tumusiime and Vedeld, 2012; Vedeld et al., 2012). In the 1980s, many different approaches to the decentralisation of control over wildlife resources emerged, and attempts to improve relations with local communities living in and around PAs meant changing official policies. Decentralisation included making local officials in charge of a park responsible for it, rather than having responsibility at head office, as well as involving local communities in management. In some areas, communities were not directly involved in management, but were incentivized to co-operate. The rationale behind such decentralisation of control was that communities with a stake in the natural resources of their area would be more likely to conserve them (Boggs, 2004; Hulme & Murphree, 2001). Ironically, recent research (Nelson, 2010a) has shown a reversal of this trend in the past few years: the failure of many decentralisation projects having promoted a return to a more centralised view of natural resource management.

3.1. SOCIO-ECONOMIC BACKGROUND OF STUDY COUNTRIES

In order to contextualise the remaining sections of this chapter, Map 1 illustrates the eight study sites in the six countries and Tables 3 and 4 list details of the camps and communities surveyed in each country.

Map 1: Map of region showing study countries & study sites

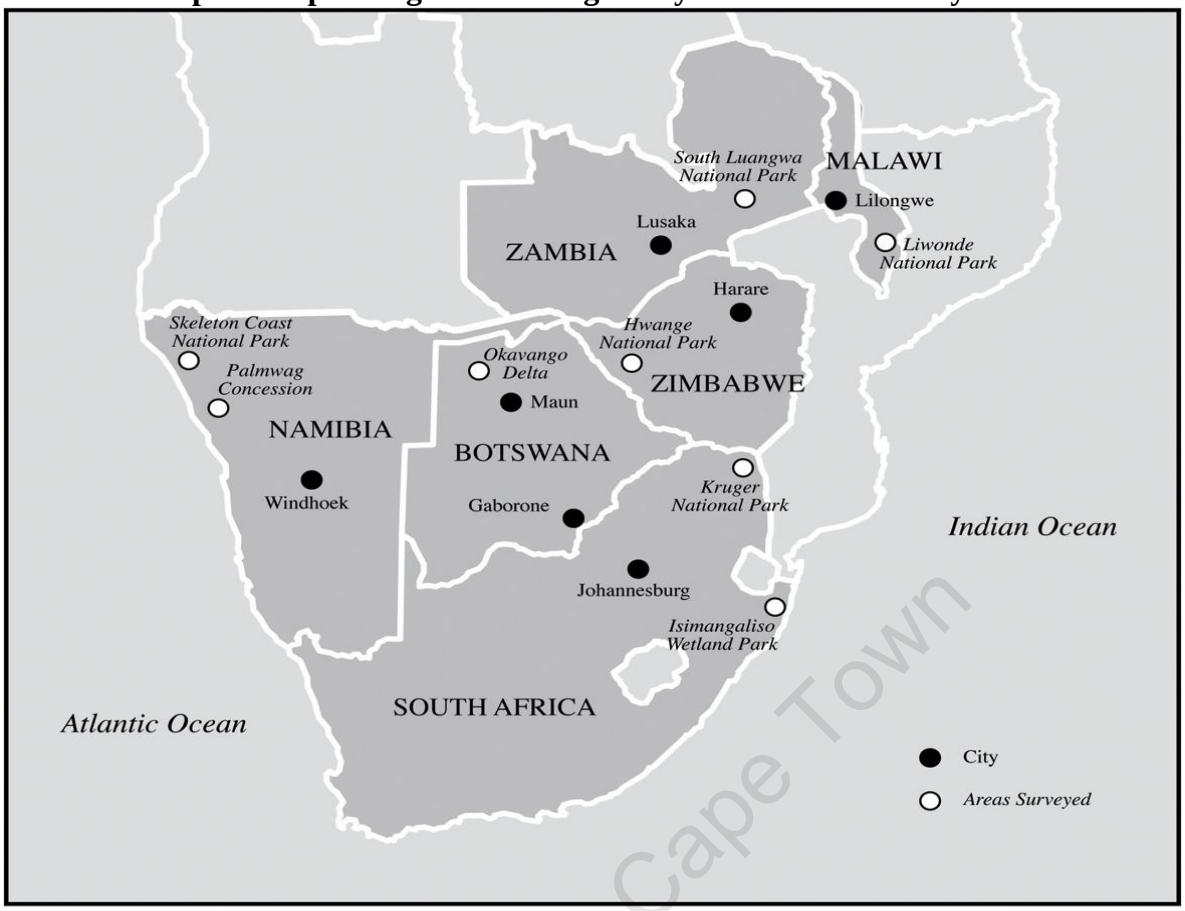


Table 3: List of Wilderness Safaris ecotourism camps surveyed and number of interview schedules

Country	Name of Wilderness Safaris camp	No. of staff	No. of interview schedules conducted	% staff interviewed
Botswana	Duba Plains	35	26	74.3%
	Little Vumbura	34	21	61.8%
	Vumbura Plains	104	54	51.9%
Malawi	Mvuu Camp & Mvuu Wilderness Lodge	108	76	70.4%
Namibia	Skeleton Coast Camp	23	17	73.9%
	Palmwag Lodge	78	27	34.6%
	Damaraland Camp	30	19	63.3%
	Doro Nawas Camp	35	23	35.7%
South Africa	Pafuri Camp	52	33	63.5%
	Rocktail Beach Camp	42	29	69%
Zambia	Kalamu Lagoon Camp	23	15	65.2%
Zimbabwe	Little Makalolo	15	12	80%
	Makalolo Plains	30	19	63.3%
	Linkwasha	34	18	52.9%
	Davison's Camp	40	25	62.5%
Total	**16 camps**	**683**	**414**	**60.6%**

In total, 385 staff interview schedules were included in the analysis and 1400 community interview schedules. The reasons for this are discussed in section 4.3 on page 51.

Table 4: List of communities surveyed and number of interview schedules

Country	Name of Community	No. of households	No. of interview schedules conducted	% community interviewed
Botswana	Seronga	410	90	22%
	Gunotsoga	127	36	28.3%
	Eretsha	154	40	26%
	Beetsha	190	50	26.3%
	Gudigwa	183	45	24.6%
Total Botswana		**1064**	**261**	**24.5%**
Malawi	Balaka District – Kwenje village	No figures available	66	
	Balaka District – Ligwangwa village		52	
	Balaka District - Nandumbo/Galanje		46	
	Balaka District – Chikolongo village		36	
	Balaka District - Bimbi/Maninji, Chiyaka & Mayera		50	
	Balaka District – Gunda*		1	
Total Malawi			**251**	
Namibia	Puros Conservancy	48	30	62.5%
	Okondjombo Conservancy	48	28	58.3%
	Orupembe Conservancy	74	31	41.9%
	Sanitatas Conservancy	46	17	37%
	Sesfontein Conservancy	463	60	12.9%
	Anabeb Conservancy	370	45	12.2%
	Torra Conservancy	222	60	27%
Total Namibia		**1271**	**271**	**21.3%**
South Africa	Makuleke village	1448	135	9%
	Mabaligwe/Boxahuku	830	76	9%
	Makahlule/Block H	800	30	4%
	Mpukane community	147	91	62%
Total South Africa		**3225**	**332**	**10.3%**
Zambia	Villages around South Luangwa National Park	214	67	31%
Total Zambia		**214**	**67**	**31%**
Zimbabwe	Nganyana	76	66	87%
	Ngamo	65	53	82%
	Mpindo	34	27	79%
	Siwela	23	22	96%
	Stambare	40	30	75%
	Ziga	25	23	92%
Total Zimbabwe		**263**	**221**	**84%**
Overall Total			**1403**	

*One respondent from Gunda was passing through Chikolongo when we were conducting interviews. He admitted to being a fish poacher and had acquired some meat from a hippo that had been shot by the National Park.

Table 5 outlines the main socio-economic statistics for the six study countries. These countries do not have equally reliable statistics or statistics departments, consequently the figures used have come from a number of different sources (see Appendix B) and are not always from the same year. While this limits their comparability, these statistics nonetheless illustrate the overall socio-economic situation in the study countries.

Table 5: Socio-economic statistics for study countries

Country	Size	Population	Country population density (people/km²)	Gini coefficient*	HDI value & ranking (out of 169) (2010 figures)**	GDP/capita (at current prices) USD 2011	Unemployment rate	Life expectancy	HIV prevalence
Botswana	582 000 km²	1.92 million (2008)	3.3	0.61 (2007)	0.633/ 98	$4377	17.8% (2009/2010)	48.1 years	23.9% (2009)
Malawi	118 484 km²	13 million (2008)	139	0.66 (2007)	0.385/ 153	$187	7.8% (2005)	38-40 years	10.6% (2010)
Namibia	824 116 km²	2.1 million (2011)	2.6	0.6 (2003/4)	0.606/ 105	$2749	16.7% (2012)	57 years	approx. 13.1% (2011)
South Africa	1.2 million km²	50.59 million (2011)	41.16	0.72 (2005/6)	0.597/ 110	$3825	24% (2010)	54 years (est. 2010)	10.6% (2011)
Zambia	752 614 km²	13.8 million (2011)	13.1	0.6 (2006)	0.395/ 150	$439	13% (2000)	52 years	13.5% (2009 est.)
Zimbabwe	390 757 km²	12.97 million (2012)	33	0.56 (2003)	0.140/ 169	$345	9.3% (2004)	45 years (2002)	15.3% (2007 est.)

Source: see Appendix B

*The Gini Coefficient is a measure of income distribution in a country. It compares actual distribution to total equal distribution. The coefficient ranges from zero to one. Perfect equality of income distribution gives a coefficient of zero, the more unequal the distribution, the closer the coefficient is to one.

**The Human Development Index (HDI) provides a composite measure of three dimensions of human development;

i) living a long and healthy life (measured by life expectancy);

ii) being educated (measured by adult literacy and enrolment at primary, secondary and tertiary level);

iii) having a decent standard of living (measured by purchasing power parity (PPP) income)

(www.undp.org).

Table 5 shows that the majority of the study countries have high levels of poverty, unemployment and inequality. Economic activities that improve local socio-economic conditions are important and this study will illustrate the role ecotourism can play in this regard. In Zimbabwe, Zambia and Malawi there is little support from government in social or economic terms. In such situations the role of the private sector becomes even more important in terms of growth and development.

The opportunity costs (OCs) of conservation vary across the six countries surveyed, and are very much a function of the land potential (Norton-Griffiths & Southey, 1995). These costs include the income lost by using the land for conservation or ecotourism as opposed to another use, as well as the costs resulting from HWC as a consequence of conservation (Baral & Heinen, 2007; Hill, 2004; Norton-Griffiths, 1996; Norton-Griffiths & Southey, 1995; Scherl et al., 2004). Namibia, for example, has a very low OC since the arid nature of the country leaves few alternative land uses.

The population density in the Kunene region in the north-west of Namibia, where the research was conducted, is 0.6 people per km² (National Planning Commission, 2003). In contrast, the Malawian study area (Balaka district) has a population density of 144 people per km² (Malawi Population and Housing Census, 2008). The OC of land set aside for conservation there is already high due to high rainfall and fertile soils allowing for a number of alternative land uses. In such areas it is even more important that ecotourism provides tangible, sustainable benefits to surrounding communities. Table 6 gives the population densities for all study areas. OCs for conservation are generally lower in areas where primary production is low, cultivation is not possible, and human population densities are therefore also lower (Woodroffe, Thirgood & Rabinowitz, 2005b). In such situations, conservation quickly becomes a competitive land use option that can assist people to find employment through the introduction of ecotourism.

Table 6: Population density figures for each study area

Country	Study area	Population density (people per km²)	Data source
Botswana	Ngamiland West	2	Central Statistics Office, Botswana Census, 2001
Malawi	Balaka District	144	Malawi Population and Housing Census, 2008
Namibia	Kunene Region	0.6	Namibia Population and Housing Census, 2001
South Africa	Kwazulu-Natal	38.2	Statistics South Africa, Census 2001
	Limpopo Province	43	Statistics South Africa, Census 2001
Zambia	Eastern Province	18.9	Central Statistical Office, Zambia Census, 2000
Zimbabwe	Tsholotsho District	15.2	World News, 2012

The next sections briefly describe the study sites (see Appendix C for more details on the study countries).

3.2. BOTSWANA STUDY AREA: KWEDI CONCESSION & OKAVANGO COMMUNITY TRUST (OCT) VILLAGES

The study areas for Botswana were the camps in the Kwedi Concession (Duba Plains, Little Vumbura and Vumbura Plains) and the Okavango Community Trust (OCT) villages[5] (see Map 2). The conservation area is not fenced and wildlife moves freely through the study villages.

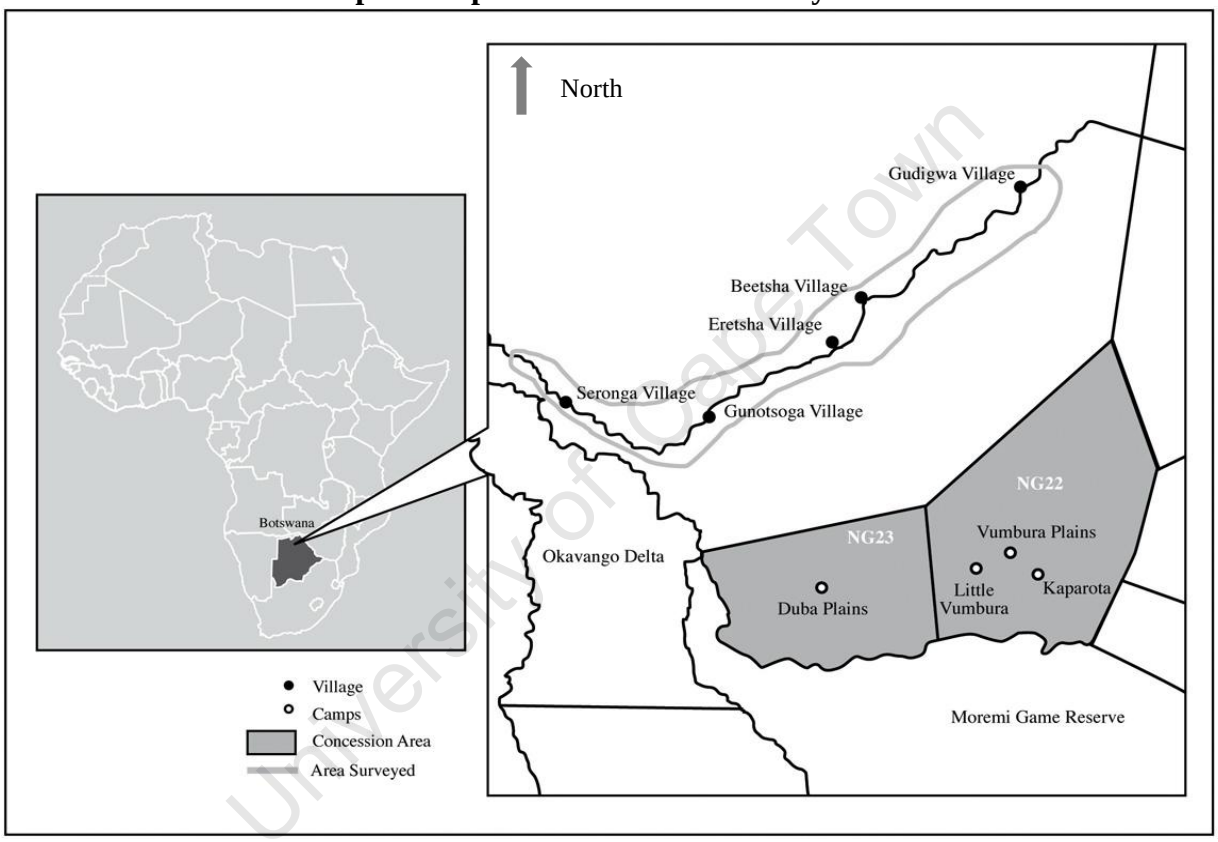
In 1994, the government of Botswana leased two areas of Ngamiland, NG 22 and NG 23 (Kwedi Concession), to five villages (Seronga, Gunotsoga, Eretsha, Beetsha and Gudigwa) situated in NG 11 and NG 12. This relationship was unique in Botswana as the five villages do not lie inside the concession area, but to the north of it. The OCT was formed by the five villages to administer and oversee the management of the concession agreement and the distribution of any funds acquired. It was set up in 1996 and represents the five villages in any negotiations, discussions or agreements with the private sector partner, currently (in 2013) Wilderness Safaris Botswana. There is an OCT office in each of the five villages, and the OCT Board includes representatives from each village. Many people in the OCT villages depend on food aid from government as there are limited income-generating activities in the area, and those crops grown are frequently destroyed by elephants. This highlights the importance of ecotourism employment in the concession areas. The proximity of the villages to the Okavango Delta also results in periodic flooding. Indeed, while conducting the

[5] For more information on the OCT/WS partnership see Snyman (forthcoming (b)).

interviews (2009) the majority of the people in Eretsha village had been relocated and housed in UN Refugee Agency tents, as a result of excessive flooding.

Map 2 shows that the ecotourism camps of Little Vumbura and Vumbura Plains are situated in NG 22, as well as the Wilderness Safaris Botswana training facility at Kaparota, while Duba Plains[6] is the only camp situated in NG 23. Kaparota is a facility specifically for training in tourism- and conservation-related jobs and focuses on the company's localization management training programme.

Map 2: Map of the Botswana study area



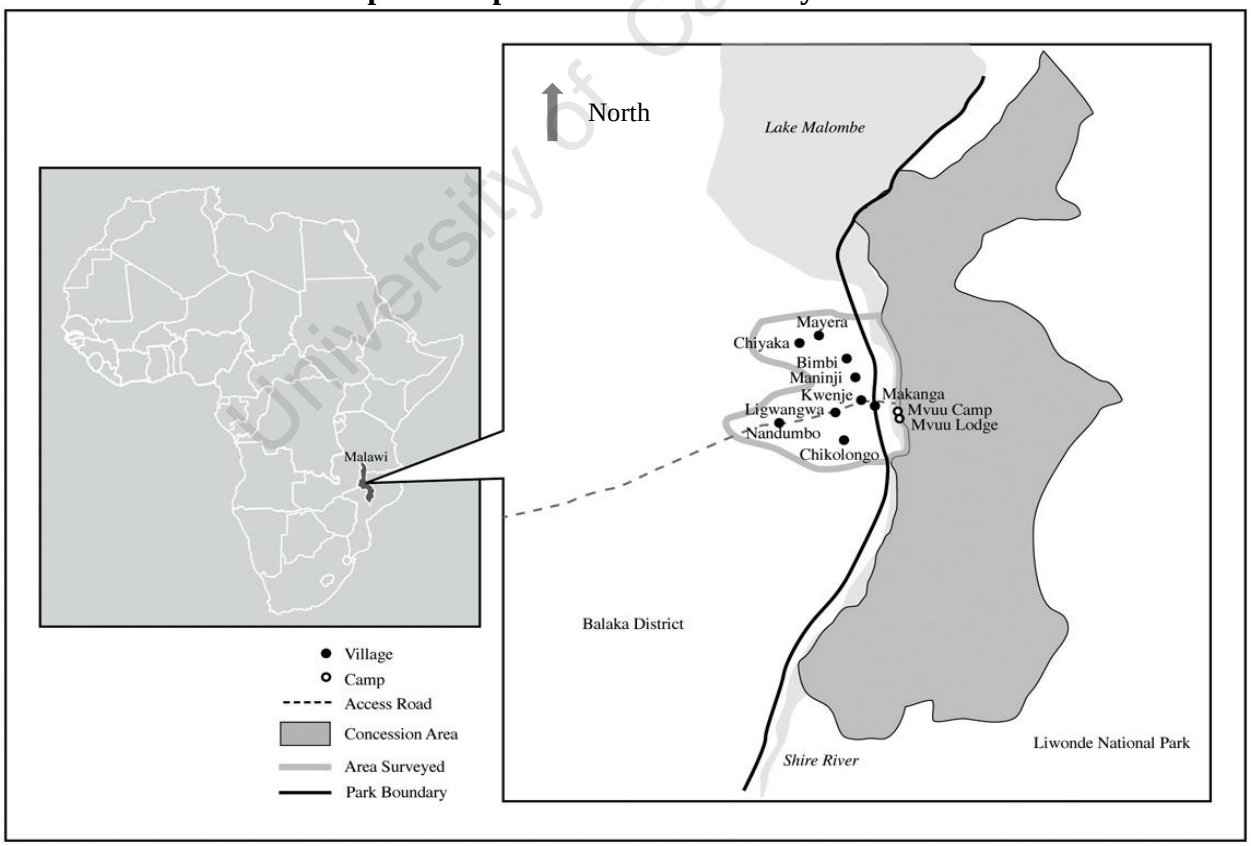
[6] At the time of the interview schedules, Duba Plains Camp was owned by WS. However, the rights to operate this camp, and the camp assets, were subsequently sold to another private sector operator.

3.3. MALAWI STUDY AREA: LIWONDE NATIONAL PARK & ADJACENT VILLAGES, BALAKA DISTRICT

The study areas in Malawi were Mvuu Camp and Mvuu Wilderness Lodge in Liwonde National Park and villages adjacent to the Park.[7] A fence exists between the Park and the villages, but large sections have been destroyed by elephants as well as people stealing fencing for housing, for poaching traps and for agricultural fences.

Liwonde National Park was gazetted in 1973 and is one of Malawi's smaller national parks (548 km²) (Novelli & Scarth, 2007). Human population densities around the park are high and subsistence poaching (fishing) in the Shire River within the Park's boundaries is common. There is a large amount of HWC (particularly hippopotamus and elephants). While conducting the interviews (2009) a hippopotamus was shot by the Department of Wildlife, as it was destroying village crops. The meat was then sold in the villages. A number of households interviewed grew either tobacco and/or cotton as cash crops and relied on income earned from this to support their households each year.

Map 3: Map of the Malawi study area



Wilderness Safari's Mvuu Camp and Mvuu Wilderness Lodge are located on the eastern banks of the Shire River within the Liwonde National Park and fall into the Machinga

[7] For a detailed analysis of the impact of the WS camps in Liwonde see Snyman (2013).

District. The majority of the staff however come from Balaka District and as it borders directly onto the Park it was decided to conduct the community interviews in this district. Drought is always a potential shock in Balaka, as part of the district lies in a rain shadow area (Malawi Food Security Outlook, 2011). Thus, despite large areas of fertile land, drought, land scarcity, population density and increasing population growth puts pressure on natural resources and results in high levels of poverty, deforestation and consequent land degradation.

3.4. NAMIBIA STUDY AREAS: KUNENE REGION CAMPS & ASSOCIATED CONSERVANCIES

The Kunene Region, where the Namibian study areas were located, is situated in north-western Namibia. In 2011, the population of the region was 86 856 (0.6 people per km²). The combination of erratic and low rainfall and generally infertile soils means that the main economic activities in the region are semi-nomadic pastoralism or sedentary livestock farming at low stocking rates (author, pers. obs., 2009; Jones, 2001, p. 162). Wildlife is allowed to move freely in the conservancies, resulting in a high incidence of HWC.

There were two main study areas in Namibia; in the southern Kunene, three camps were surveyed (Damaraland Camp, Doro Nawas and Palmwag Lodge). The three conservancies surveyed here were Torra, Sesfontein and Anabeb. In the northern Kunene, one ecotourism camp was surveyed, Skeleton Coast Camp. The four conservancies surveyed here were Puros, Okondjombo, Orupembe and Sanitatas.

3.4.1. DAMARALAND CAMP

The Torra Conservancy[8] (originally Ward 11 (Salole, 2003)), located in the southern part of the Kunene region, was registered in June 1998 and has approximately 1 200 people of various ethnic groups living in the conservancy (Namibian Association of CBNRM Support Organisations (NACSO), 2011).

The joint venture (JV) agreement signed in 1996 between the Torra Conservancy and WS was the first JV agreement between a private tourism company and a community in Namibia (Kemp, Mendelsohn & Jones, 2009). In 2000, Torra was the first conservancy to cover its own running costs, including salaries for staff, vehicle maintenance and office management (Long, 2002; Scanlon and Kull, 2004). In 2010, WS assisted the Conservancy to raise a bank loan of NAD500 000 (approx. USD62 000) based on the collateral of their shareholding in

[8] For more information on the joint venture between the Torra Conservancy and Wilderness Safaris see Snyman (2012a).

Damaraland Camp. This money was used to build Damaraland Adventurer Camp: the first instance of a community raising their own funds for building purposes, highlighting the capacity of JVs to empower a community and provide experience in financial management and business skills (Snyman, 2012a).

A number of households in Torra kept livestock with some households, who had access to water, having small vegetable gardens. Within the conservancy, the town of Bergsig is relatively well-developed compared to the other areas surveyed in Namibia and has electricity, a school and mobile phone access.

3.4.2. DORO NAWAS CAMP

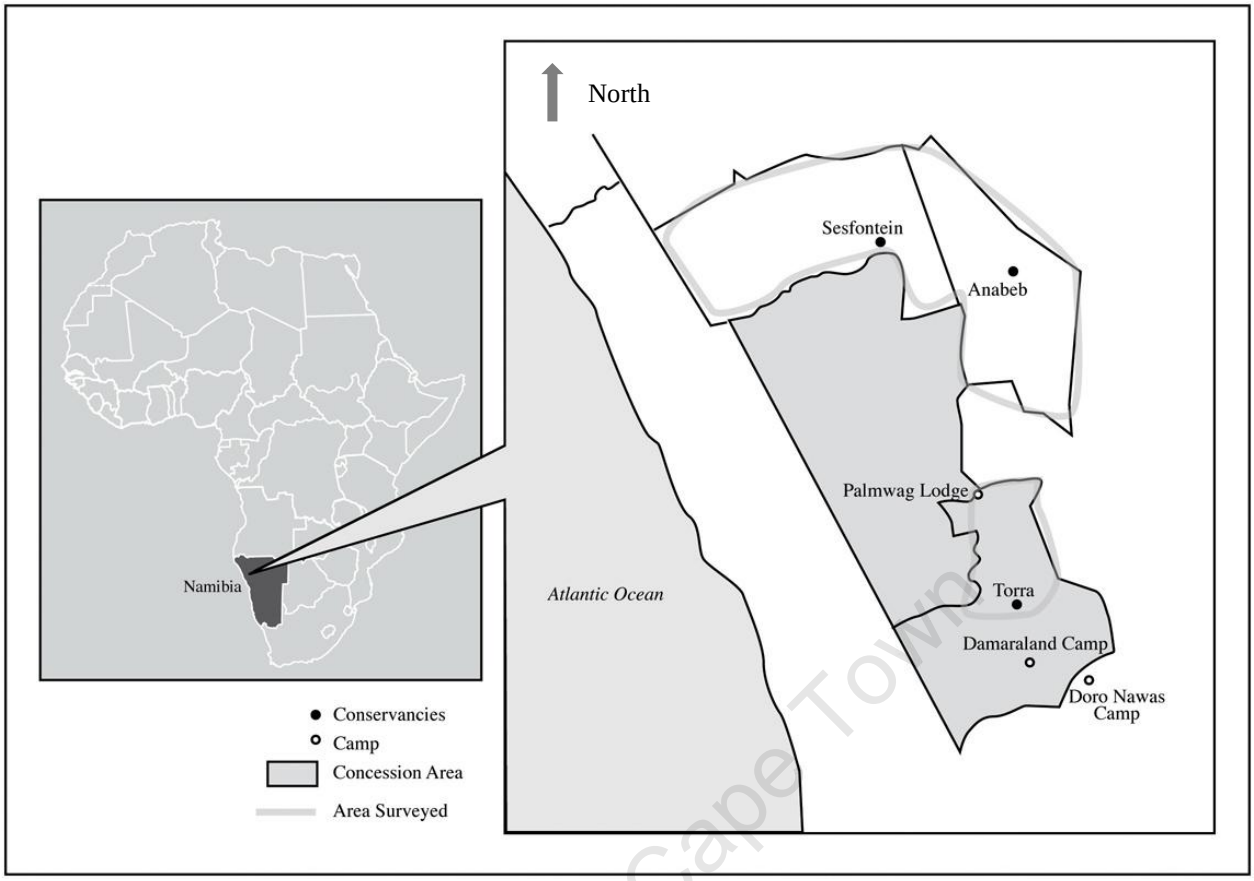
Doro Nawas Camp, which was also surveyed, is a JV between Wilderness Safaris Namibia and the Doro !Nawas Conservancy. Due to time constraints, community interviews were not conducted in the Doro !Nawas Conservancy. The staff interview schedule results were, however, included in the analysis as they are still relevant to the study.

3.4.3. PALMWAG CAMP

Palmwag Camp, the third camp surveyed, is situated in the Palmwag Concession, and makes payments to three conservancies, informally known as the Big Three: Anabeb, Sesfontein and Torra. The Camp also pays Park fees to the government: Ministry of Environment and Tourism (MET).

All three conservancies allow a certain amount of hunting during the hunting season, which earns extra income for the conservancy and provides meat for conservancy members. While conducting the interviews two refrigeration trucks and four hunting vehicles were seen in the Sesfontein conservancy and (perhaps unsurprisingly) very little wildlife. Many households in these conservancies kept livestock (goats) and relied on government pensions for income.

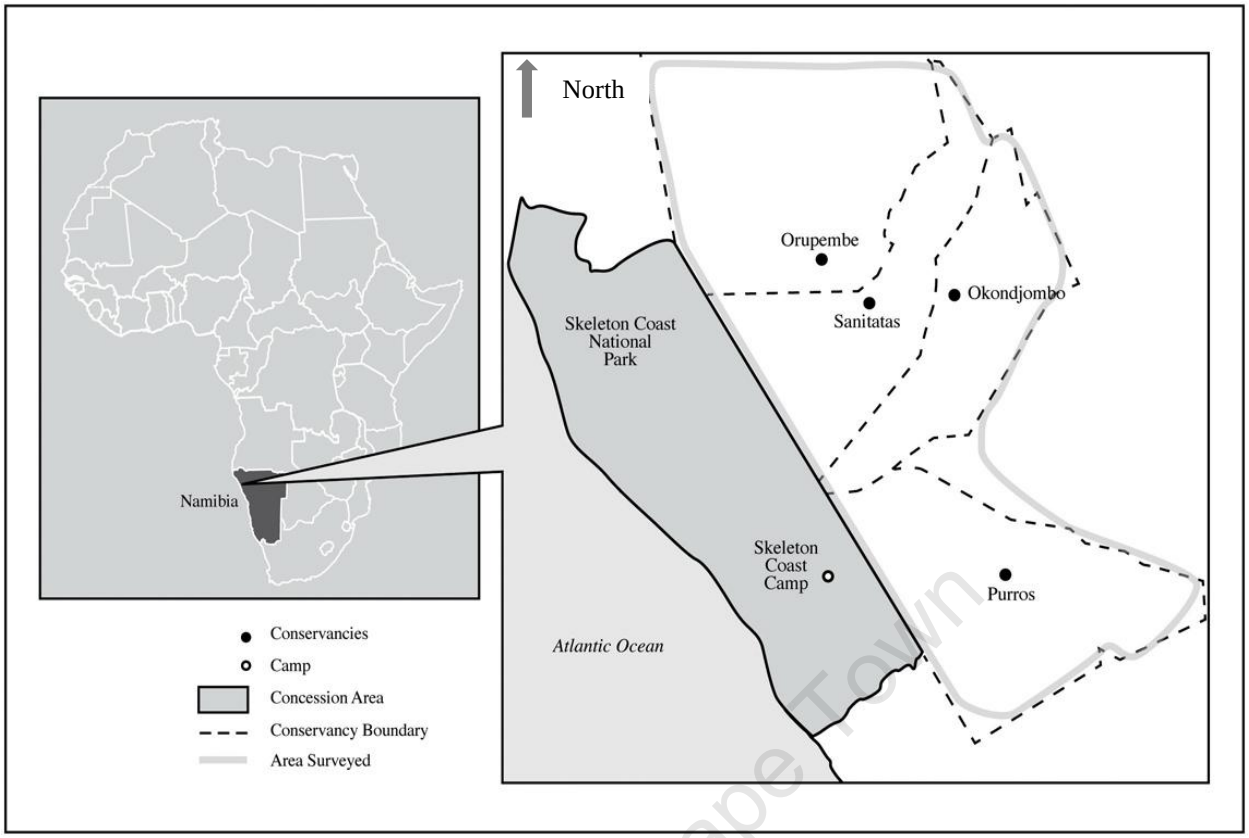
Map 4: Map of the Namibia study area: Southern Kunene



3.4.4. SKELETON COAST CAMP

Skeleton Coast Camp was situated in Skeleton Coast National Park and Wilderness Safaris Namibia voluntarily paid community levies to the four conservancies bordering the Park: Okondjombo, Orupembe, Puros and Sanitatas. This reflected a view that the communities bore some of the costs of conservation and should therefore also receive some of the benefits. The community levies were based on the number of guests who stayed at the camp. The camp also paid lease fees to the MET. According to the agreement signed with MET in April 2008, the lease for the Skeleton Coast concession would expire on the 1st January 2010. Sadly, as a result of an inability to reach an equitable agreement with MET, WS has not renewed the lease for Skeleton Coast Camp and the camp has been decommissioned. Where possible, staff from the camp have been absorbed by other WS camps in Namibia; this indicates the potential risks of community/ecotourism partnerships, for the companies, employees and communities involved (see Text Box 2 on page 25).

Map 5: Map of the Namibia study area: Northern Kunene



Most households in this area kept livestock (cattle) and neither farming nor vegetable gardens were observed. There is little development in the area, although there is a school (built by WS) located at Puros village. Infrequent boreholes were usually attended by young Himba children watering livestock and/or collecting water. The distances between villages and conservancies were substantial (a 3-4 hour drive).

3.5. SOUTH AFRICA STUDY AREAS

There were two study areas in South Africa: Pafuri Camp in the Makuleke Region of the Kruger National Park (KNP) and the associated Makuleke community (Map 6) and Rocktail Beach Camp in iSimangaliso Wetland Park and the associated Mpukane community (Map 7). The former study area falls within the Limpopo Province of South Africa and the latter into KwaZulu-Natal province.

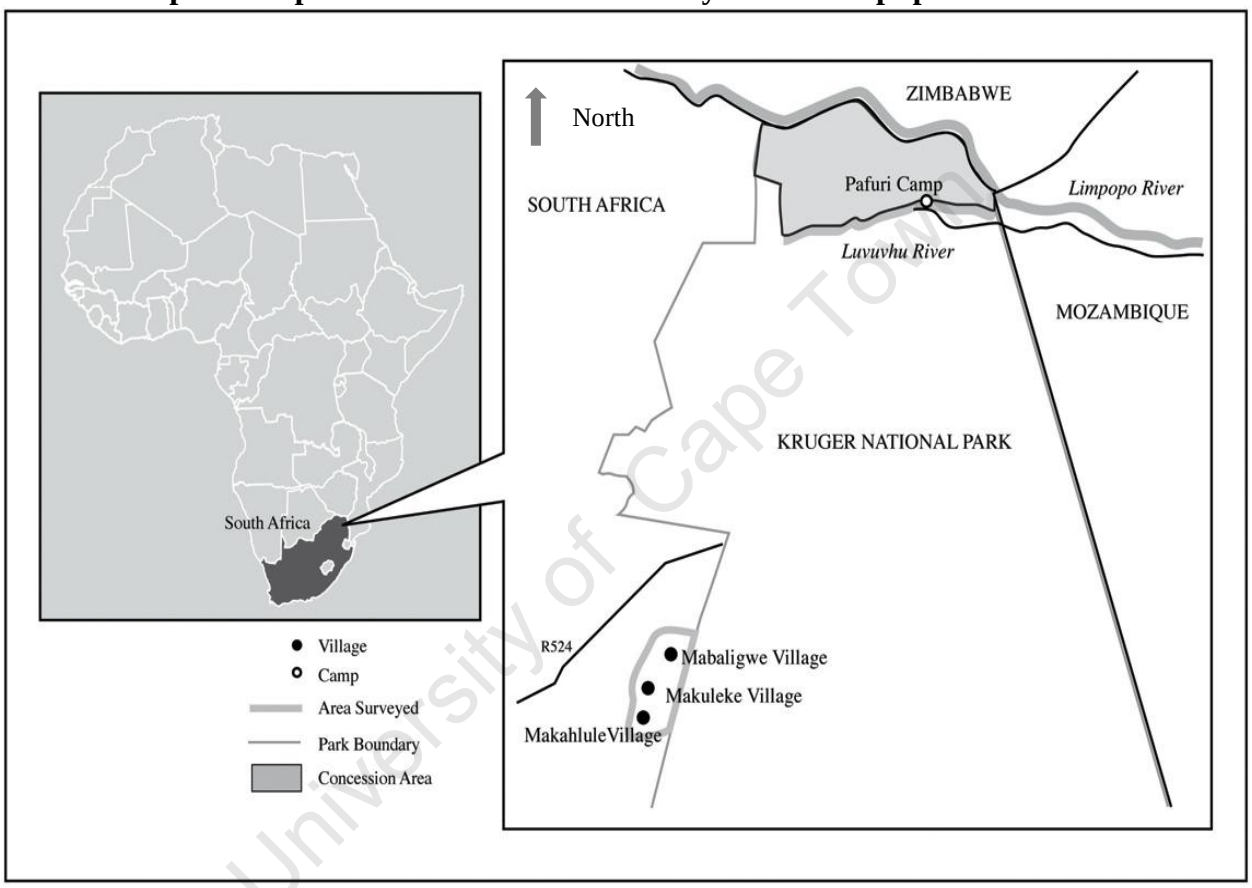
3.5.1. MAKULEKE CONTRACTUAL PARK & THE MAKULEKE COMMUNITY

In 2001, the average population density in Limpopo Province was estimated at 43 people/km², with an HIV prevalence rate of 15.6% in 2002 and an unemployment rate of 27.8% in 2004 (Statistics South Africa, 2004). It is considered a poor province with approximately 87% of

the population living in rural areas and 23% of households having no access to piped water (Limpopo Province: District and Province Profiles).

Map 6 shows the study sites in Limpopo Province. The present-day Makuleke community is located in the Thulamela Local Municipality which has the highest population concentration in the Province. There is a fence between the Makuleke community and the KNP. Incidences of HWC were, however, still reported during the interviews.

Map 6: Map of the South African study area: Limpopo Province



In 1969 the Makuleke Community, numbering about two thousand people, were forcibly removed from their home, the present-day Makuleke region of the KNP. They were resettled in three villages (Makuleke, Mabaligwe and Makahlule) about 50-60 km to the southwest, in an area called Ntlaveni (only about 6000 hectares in size). This area fell within the former Venda homeland (Kepe et al., 2005; Mahony & van Zyl, 2001; Turner, 2004b) and is where they still live today. This new area was considerably less fertile than their homes in the Makuleke region and they no longer had access to wild fruits, plants and fish (Turner, 2004b). Droughts and several crop failures resulted in a number of men in the Makuleke community migrating to the cities to earn wages to buy food (Turner, 2004b). Ntlhaveni's remote location limits employment opportunities in the area to ecotourism, jobs in the Kruger

National Park, farm work, coal mining and migrant labour (author, pers. obs., 2009 & 2010; Turner, 2004b).

In December 1995, the Makuleke community put in a land claim for the Makuleke Region of the KNP (Kepe et al., 2005). They established a Communal Property Association (CPA) as a legal vehicle to pursue the claim and receive the land title (Turner, 2004b). Membership of the CPA included all individuals who had lived in the original Makuleke Region and their descendants, as well as individuals who had joined the Makuleke community after removal. The CPA acted as a legal person in the land claim negotiations and – as the land claim was eventually resolved – is the current owner of the Makuleke Region (Steenkamp & Uhr, 2000). There are approximately 15 000 beneficiaries of the CPA (Mahony & Van Zyl, 2001). In the settlement, reached in 1998, the Makuleke agreed to preserve the region's status as a conservation area for 50 years (Kepe et al., 2005). This was the first successful settlement of a land restitution claim involving a South African National Park. The Makuleke Region was kept within the KNP, which was slightly enlarged by approximately 3000 hectares as the Makuleke reclaimed some of the Madimbo Corridor[9] (Turner, 2004b). The Makuleke section of the KNP falls into the category of a contractual national park (private land under the management of the National Parks).

In 2003 WS signed a concession agreement with the Makuleke CPA for a 15 year period, renewable every 15 years for 45 years. In terms of the agreement WS pays 8% of gross turnover from Pafuri Camp to the Makuleke CPA and the majority of jobs (no specific figure was given for this) must be given to local community members, including concomitant skills training and development. As a result of recent floods (January 2013) in Limpopo Province, an extensive portion of Pafuri Camp was washed away or destroyed and the camp is currently closed, with all staff retrenched. This highlights another potential risk associated with ecotourism in rural areas (natural disasters) which can affect local employment and revenue flows to communities.

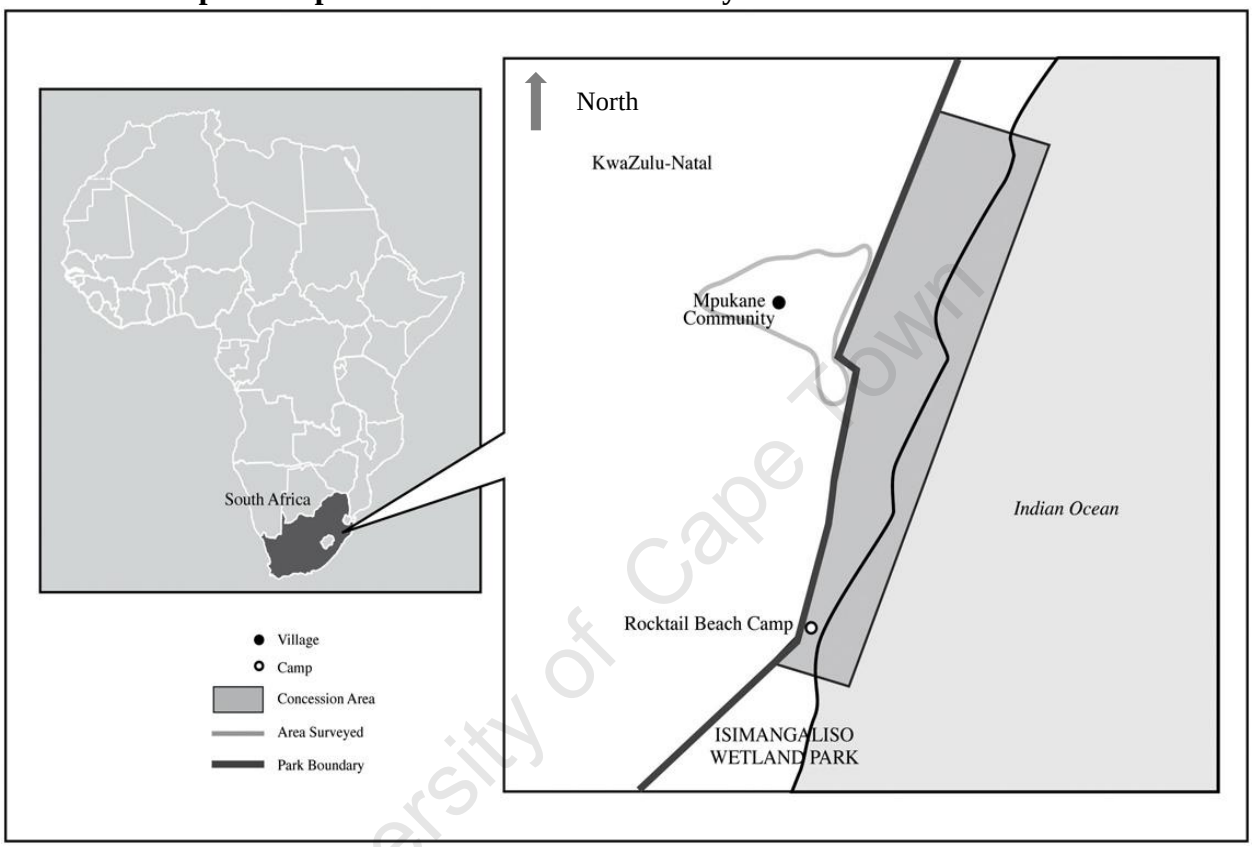
3.5.2. ISIMANGALISO WETLAND PARK & THE MPUKANE COMMUNITY

In 2011, the population of KwaZulu-Natal was 10.8 million (Statistics South Africa). An unemployment rate of 22.3% was recorded in 2007 (Statistics South Africa) and 61% of the population live in poverty (Human Sciences Research Council, 2004). The HIV/AIDS

[9] The Madimbo Corridor is a piece of land along the Limpopo River. Residents of this area were forcibly removed in the 1960s to make way for the South African National Defence Force (SANDF) and the establishment of the Matshakatini Nature Reserve (Whande, 2007, as cited in Whande & Suich, 2009).

pandemic is a major issue, with KwaZulu-Natal province having the highest prevalence rate (15.8%) in the country (South African Department of Health Study, 2010). Map 7 shows the study sites; no fences exist between iSimangaliso Wetland Park and the Mpkuane Community. The community is allowed to graze their cattle and collect certain traditional plants in the Park.

Map 7: Map of the South African study area: Kwazulu-Natal



RBC is situated in the iSimangaliso Wetland Park, which is managed by the iSimangaliso Wetland Park Authority (IWPA) and was originally formed from 16 different parcels of land: a patchwork of state-owned land, commercial forests and former military sites. Mpukane village, adjacent to the Park, where a number of RBC staff reside, was formed after two forced removals of people from within the forest reserves and by homesteads that moved further inland owing to a lack of fresh water. WS formed a joint venture with the KwaMpukane Community Trust (17.5% shares) and a local Black Economic Empowerment (BEE) partner (10% shares), who are now shareholders in RBC. The concession agreement stipulates that 8.5% of gross turnover is paid to the IWPA and the JV partners receive dividends from their shareholding. The IWPA also receive payments for the period October to March for turtle viewing permits.[10]

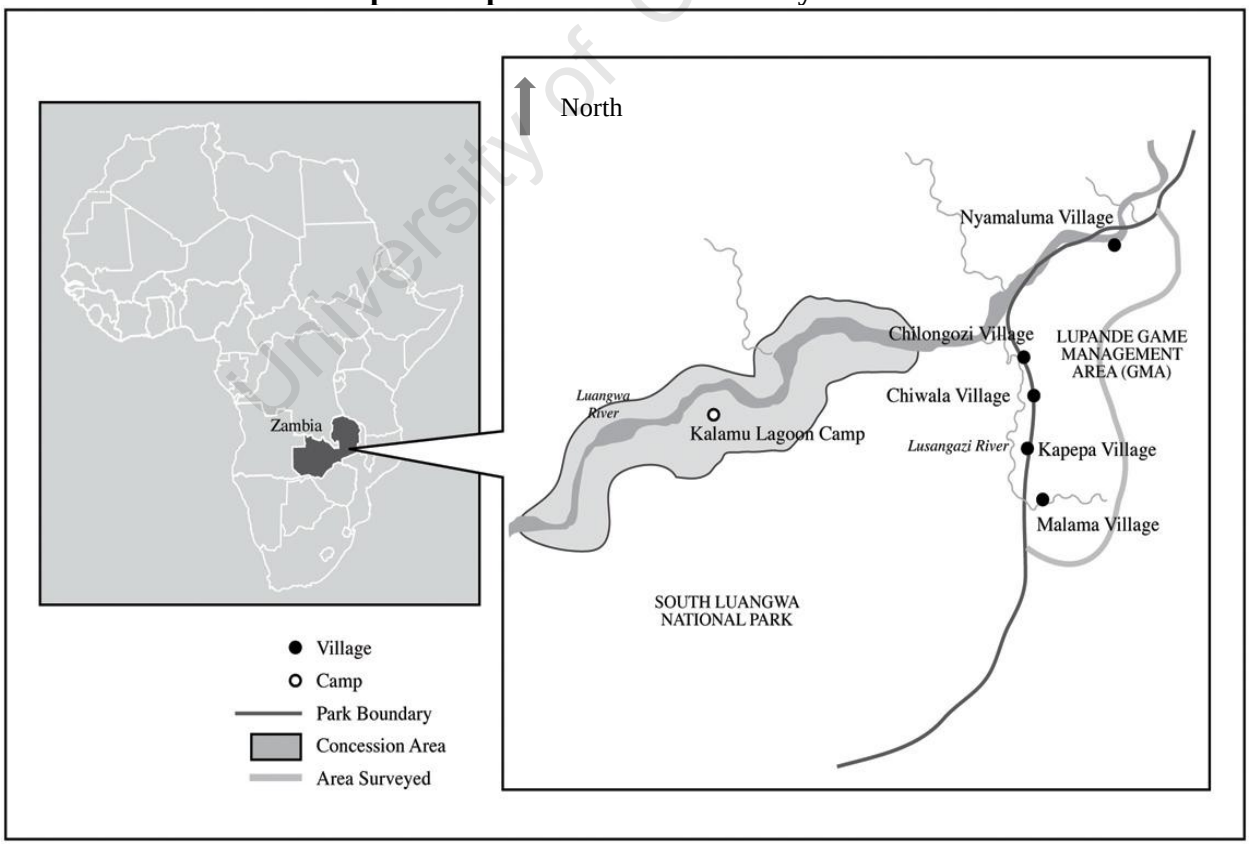
[10] These permits are required for every tourist who views nesting turtles or hatchlings on night drives from RBC.

3.6. ZAMBIA STUDY AREA: SOUTH LUANGWA NATIONAL PARK & MALAMA CHIEFDOM

The study areas in Zambia were Kalamu Lagoon Camp in South Luangwa National Park and villages in the Malama Chiefdom abutting the Park (see Map 8). The Eastern Province, where South Luangwa National Park is situated, is one of the poorest provinces in Zambia (Central Statistical Office Zambia, 2003). In 2010, the Eastern Province had a population of 1 707 731, growing at an average annual rate of 2.7 percent (Central Statistical Office Zambia, 2011).

South Luangwa National Park, in the fertile Luangwa Valley, supports large numbers of a variety of animals and birds, and is therefore attractive for ecotourism. The Park is unfenced on the east, allowing wildlife to move freely into the study villages. HWC, especially with elephants, is therefore common and negatively impacts on subsistence farming. Early one morning, while conducting interviews we saw an elephant in Chimbwa village. Despite this, households do grow crops such as maize and sorghum. A number of households were observed earning income from brewing local beer and a local bartering system was also used.

Map 8: Map of the Zambia study area



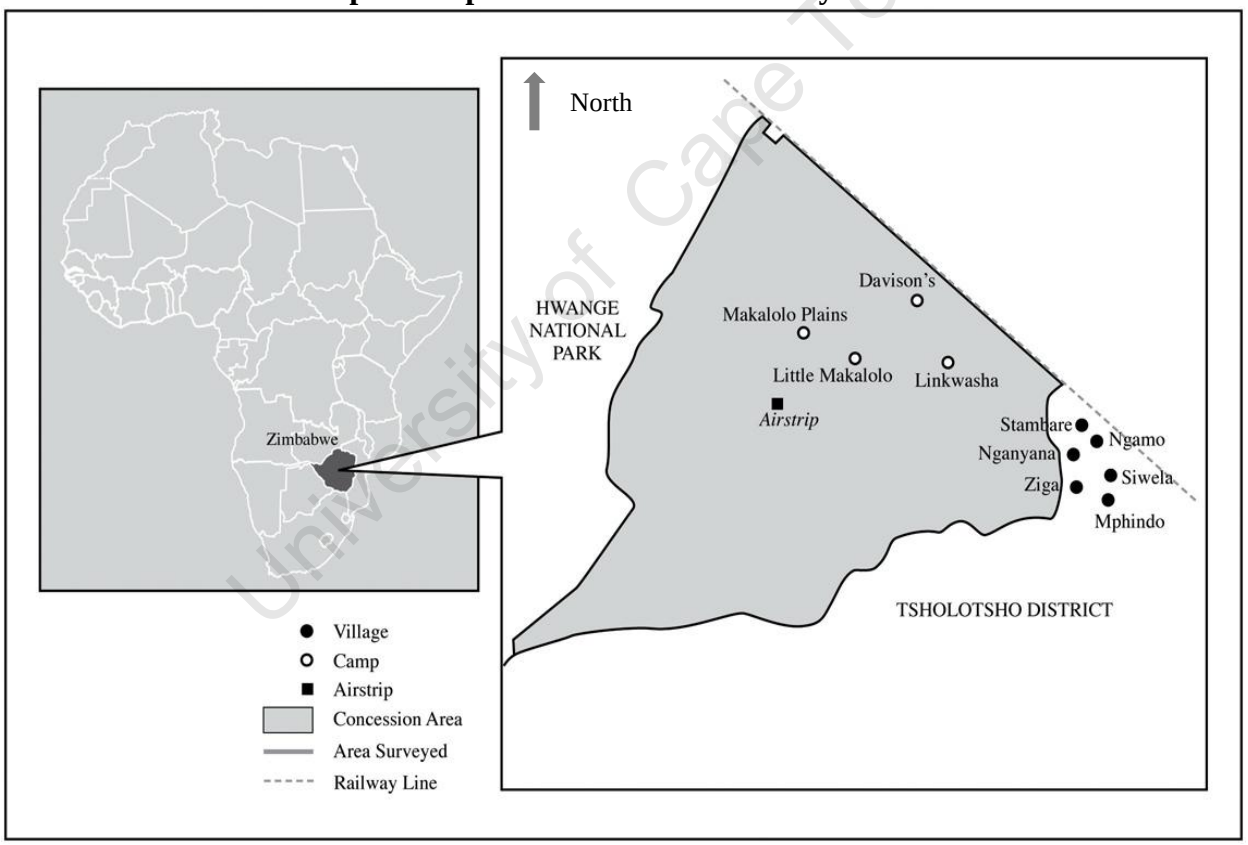
The communities along the eastern boundary of the Park fall into the Lupande GMA and Malama Chiefdom. The Lupande GMA has an estimated population of 47 376 (CSO, 2003,

as cited in Nyirenda, Chansa, Myburgh & Reilly, 2011, p. 482), with little development in the area and limited employment opportunities: in ecotourism, hunting and ZAWA (the country's wildlife authority). The recent (2011) disbanding of the ZAWA Board by the new president, Michael Sata, and the release of hundreds of poachers from prison, will certainly have an impact on conservation in Zambia (Allison, 2011).

3.7. ZIMBABWE STUDY AREA: HWANGE NATIONAL PARK & ADJACENT VILLAGES, TSHOLOTSHO DISTRICT

The study areas in Zimbabwe were four ecotourism camps in Hwange National Park (Davison's Camp, Makalolo Plains, Little Makalolo and Linkwasha) and six villages abutting the Park (see Map 9), which is fenced, but not electrified, resulting in wildlife frequently moving into the villages.

Map 9: Map of the Zimbabwe study area



Zimbabwe has 61 districts (10 provinces), with the study villages alongside Hwange National Park located in Tsholotsho district, which had a population of approximately 113 895 in 2012 (15.2 people per km^2). The main economic activity in Tsholotsho is farming. The Kalahari sands are surprisingly good for cattle rearing. As there is no surface water available, it does however need massive investment in terms of reliable water provision and disease prevention.

Hwange town is the centre of the coal industry, with the Hwange Colliery being the largest coal mine in Zimbabwe. Around the ecotourism sections of Hwange National Park (declared in 1929) are community lands, hunting concessions and on the west lies Botswana. Despite HWC being common in the area, most households have 'gardens', growing sorghum, ground nuts, maize, sweet reed, watermelon and other vegetables, mostly for subsistence, with some sale of surpluses and cash cropping, especially maize, sorghum and tobacco. Water in the villages comes from communal boreholes (many of which have been constructed and/or maintained as a result of tourism in the area).

CHAPTER FOUR - RESEARCH METHODS AND DATA COLLECTION

The interview methods and data analysis techniques used in this study were developed based on a review of related literature, interview and data analysis techniques.

All camps studied were ecotourism camps in terms of their location and activities offered. In order to simplify matters in the interview process the word 'tourism' rather than 'ecotourism' was often used in the attitude questions, as respondents were more aware of this term and understood it to refer to the local ecotourism camp. The ecotourism sites in this study fall into the high-end category by virtue of the accommodation rate charged to guests (in the range of USD220 to USD1484 per person sharing per night) and the low density of beds and vehicles relative to the traversing area. Exclusivity, privacy and attention to detail are characteristics of high-end ecotourism products (Snyman, 2012c). This means that the ecotourism camps in the present study are employment intensive and offer permanent employment, as opposed to other alternative industries (e.g. hunting) in these areas that frequently offer only seasonal employment. Skills development in the camps is aimed at training employees to offer excellent service standards, as a result of the high accommodation rate charged and the concomitant high expectations of visitors to these camps.

Both primary and secondary data were collected for this study. Primary data was collected in the form of over 1800 community interview schedules in six southern African countries (copies of the staff and community interview schedules[11] used are in Appendix D and E). Through the use of the same interview schedule in six different countries, this thesis presents reasoned comparisons and analyses of the impacts of ecotourism across the region. Secondary data took the form of an extensive literature review, started at the beginning of the research process and prior to any interviews being conducted, and continued throughout the research process. The bibliography includes all references cited in the thesis, as well as other material important in the design, structure and content of the interview schedules and thesis.

[11] The interview schedules were standardised for all countries, with slight variations in the text in the attitude section based on the particular conservation area where the interviews were being conducted.

4.1. SELECTION OF WILDERNESS SAFARIS ECOTOURISM CAMPS: LIMITATIONS AND BIAS

A single ecotourism enterprise, Wilderness Safaris[12] (WS), was used for this study. It was the only ecotourism company that had parallel ecotourism operations, operating according to a standard policy framework, over the six Anglophone countries in the region. This reveals the international scope of private sector ecotourism across southern Africa. The use of a single company made for ease of comparison since the head office imposes a consistent management style over its different camps in southern Africa. The company itself wished to quantify the impact of its ecotourism operations on rural communities, and gave the author access to its camps and staff and to the communities with whom they engage.

It is the author's belief that research should have practical relevance and include suggestions, based on the research analysis, for practitioners to implement. Prior to commencing the interviews, the author therefore spent considerable time with senior staff at WS establishing what information would assist their efforts to operate sustainably and engage equitably with local communities. The design of the study and interview schedules reflects this preliminary investigation and the literature review.

The process followed means that some caveats attach to this research:

- Although the camps and communities were diverse (with varying land management systems, ethnic groups, tourism camp price ranges), as only one ecotourism operator was included in the analysis, there could be limitations to the generalizability of the research.
- The author was employed by WS to conduct a study on the impact of the company's activities on rural communities. This study was, however, performed as an independent researcher looking to discover the realities of ecotourism and community development and was in no way influenced by the company.
- Local residents would have associated interviewers with WS because of the use of WS vehicles in some areas and through the introduction process. This may have biased responses to questions about WS. It is however impossible to predict the direction of the bias *a priori*; some respondents may have been strategically negative in order to ensure changes or positive in order to win favour with the private sector operator in the area (Allendorf et al., 2006). The results showed both positive and negative responses in all areas and many respondents were clearly comfortable expressing negative responses.

[12] For more information on Wilderness Safaris see www.wilderness-safaris.com

- The presence of the researcher during the administration of the interview schedule may have influenced some respondents and their answers to attitudinal questions regarding tourism and conservation. However, since the bulk of the interview schedule was socio-economic in nature, this should not have proven problematic. There remained the risk of strategic bias: the author did feel that some non-staff respondents, particularly in Zimbabwe, understated their income and overstated their expenses,[13] perhaps in the hope that the researcher would assist them in some way. When it was felt that this was occurring, the author re-iterated to the respondent that the interview was anonymous and honest answers were required.

4.2. DESIGN OF THE INTERVIEW SCHEDULE AND PILOTING

Both staff and non-staff interview schedules consisted of structured questions, the majority being close-ended, though some allowed for further elaboration.

The interview schedules were broken down into the following sections: personal information (included demographic and socio-economic questions), education, work experience, household information (included all questions on household income and expenses), health and safety and the conservation area (included all questions on attitudes towards tourism and conservation). The majority of the close-ended questions were socio-economic and related specifically to the household. Attitudes towards tourism and conservation were measured with a choice question, followed by an option to expand on the answer if desired.

The survey period of 22 months (from January 2009 to October 2010) incorporated both the pilot and the main study. The pilot interviews were conducted at Chintheche Inn overlooking Lake Malawi where 26 staff interviews were conducted. The interview schedule was then revised for the main study based on the pilot and on comments from respondents. An additional question relating to visitation of the PA was also included after the first round of interviews in the main study.

4.3. SAMPLING

Two types of community member were targeted in this study; those from the community employed in the high-end ecotourism operation (staff) and those not employed in the ecotourism operation (non-staff). All respondents lived in, or adjacent to, the conservation

[13] This was confirmed by the translator who knew some of the respondents and mentioned that they were not always answering truthfully with respect to income and expenditures.

area in which the ecotourism operation was situated. This allowed the comparison of community member's household income and attitudes with those of an equivalent person employed in high-end ecotourism. Although comparison with incomes of communities further away would have given an idea of second round benefits accruing to the local community, it was felt that this went beyond the scope of the thesis.

The selection of study sites was dictated by the presence of a community-ecotourism relationship or partnership, or because the community lived in or adjacent to the conservation or protected area, or a combination of these. In selecting the study sites, this thesis follows the International Union for the Conservation of Nature (IUCN) view of a PA as, *"A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values"* (Dudley, 2008, p. 8).

PAs need not be government owned, but can include areas owned and/or managed by communities, private individuals, NGOs or companies (Makindi, 2010). The common feature of the areas covered in this study is that all have been specifically set aside for conservation. At one extreme this involved the total relocation of local people formerly living in the area (e.g. the Makuleke community in South Africa), at the other extreme are conservation areas in which people still live and have access to the natural resources (e.g. the Namibian conservancies).

The inclusion of income and expenditures in the interview schedule necessitated a household-based approach to avoid duplication of data. A household is defined here as a group of people living together and sharing income and expenses (Mohr & Fourie, 2003, as cited in Simelane et al., 2006). Kideghesho et al.'s (2007) notion of a household as '*a group of one or more persons living together under the same roof or several roofs within the same dwelling and eating from the same pot or making provision for food and other living arrangements,'* is also relevant, reflecting the lifestyle of rural communities in southern Africa. Only one individual per household was interviewed, even if some members were not living under the same roof at the time.

Few of the study sites had accurate or recent maps of households, dictating other means of sample size selection. Sample sizes varied with the size of the community or camp being surveyed. An attempt was made to interview more than 60% of the community staff at every

camp and at least 10% of households in all adjacent communities. Logistically, however, this was not always possible in the non-staff interviews. If the survey area was small, then the majority of the households in the area were interviewed. If the survey area was large, then for logistical reasons, a subset of villages and households was selected. Household numbers were obtained from the latest census figures and/or from the respective Headman/Chief/Community Trust. All community staff on duty and available for interview were interviewed, while non-staff households were selected randomly, either by walking through the village interviewing every second household (or the next household where someone was available) or interviewing a household member in a public area, e.g. local shop or meeting area.

A detailed breakdown of the camps and communities surveyed and the total number of interview schedules in each can be found in Tables 3 and 4 on pages 32 and 33. Table 7 summarises the interview schedule totals.

Table 7: Total number of staff and non-staff interview schedules conducted in each country

Country	Total staff interview schedules	Total non-staff interview schedules	Total interview schedules
Botswana	99	261	360
Malawi	74	251	325
Namibia	81	271	352
South Africa	61	329	390
Zambia	15	67	83[14]
Zimbabwe	55	221	276
Total	**385**	**1400**	**1785**

In total 1817 interviews were conducted, but three non-staff interview schedules were excluded from the overall analysis as outliers and 29 staff interview schedules were excluded after it was found that these staff members did not come from the community living near the relevant PA.[15] A total of 1785 interview schedules were therefore included in the analysis for this study: 1400 non-staff and 385 staff interview schedules. Not all of those interviewed answered all the questions, in consequence some analyses had to be conducted using a smaller sample.

[14] Despite the small sample size in Zambia it was felt to be relevant and representative of the area where the interviews were conducted (see section 4.6.6. on page 60).

[15] There was frequently a lack of the necessary tourism-related skills, for example, guiding or cooking, in the local communities, which resulted in staff from outside the communities being employed.

4.4. INTERVIEW TECHNIQUE

Before any interviews were conducted in the communities, permission was obtained from the relevant local authority; Community Trust, Chief, Tribal Authority or Headman. The interviews were conducted by both male and female interviewers and local translators were used whenever the respondent could not speak/understand English. Each interview was conducted verbally, with the interviewer completing the interview schedule during the interview. Interviews took approximately 20-30 minutes if done in English and approximately 25-45 minutes if translated, depending on the education level of the respondent.

Peña (2007) warns that risks of misinterpretation and possible misunderstanding need to be borne in mind when translation is used.[16] When conducting interviews, attempt was made to ensure the interviewer always understood respondent's answers, particularly in the attitude questions. With the majority of the questions being socio-economic and therefore personal in nature, translation was easier and gave less chance for misinterpretation. Peña (2007) also warns that cultural bias may arise when running surveys across a range of different cultural groups. Cultural nuances were observed in the health question, as many respondents in all countries interpreted 'health' as being the amount of money they had or general financial security as opposed to physical health. This section frequently had to be explained in detail.

All interview schedules were written in English, but were orally translated where necessary. Namibia was the one exception; some interview schedules were translated into Afrikaans as a large number of respondents were Afrikaans. As the author speaks Afrikaans there was no need for a translator in these interviews.

Consent forms were signed by the respondent, the interviewer and, where applicable, the translator. If other family members were present the respondent was asked if they were comfortable having others present during the interview. If present, to ensure accuracy of data, other household members were allowed to participate in queries relating to factual information. Wherever possible, for the attitude section, the respondent was isolated and their perception sought as an individual, not for the family as a whole. In some instances, children wished to give their opinions relating to the conservation and tourism questions. Although they were often more educated than their parents, this was discouraged, in order to get a truer reflection of the particular respondent's perceptions. Impromptu discussions with the children

[16] The interviews were initially conducted with the translator in each country to ensure that they understood the intended meaning of all questions prior to translating.

after the interview illustrated to the author the impact of formal education in terms of conservation and tourism awareness. Figure 4 and Appendix L show the author conducting interviews.

Figure 4: Photographs of the author conducting interviews in Namibia & Malawi

Photos: Susan Snyman, 2009

All interviews were confidential and all questions in the interview schedule were voluntary. This resulted in some questions being unanswered. Non-response did not cluster on any particular questions.

4.5. DATA ANALYSIS

All income and expenditure data was collected in the local currency and later converted to U.S. Dollars (USD) for the final analysis. The data were initially converted to USD using the exchange rate for the local currency at the time the interviews were conducted and then inflated to 2011 for comparison purposes.

Table 8: Currencies and exchange rates for each study country

Country & local currency	Year of interviews	USD exchange rate*
Botswana – Botswana Pula	2009	6.66
Malawi – Malawian Kwacha	2009	146.81
Namibia – Namibian Dollar	2009	7.94
South Africa – South African Rand	2010	7.14
Zambia – Zambian Kwacha	2010	4766.74
Zimbabwe – United States dollar	2010	N/A

*These exchange rate values were taken from a monthly and then annual calculation of exchange rates for every country done by Wilderness Safaris Group Finance Department (2011).

The descriptive statistical analyses were done using the Statistical Package for the Social Sciences (SPSS, v. 12). The Probit, propensity score matching and regression models were conducted in STATA, v. 11.2.

As a result of socio-economic differences between countries the data has largely been analysed by country. There are however areas of commonality between the research sites due to the remote location of the sites, high levels of poverty and unemployment, and lack of alternative employment opportunities. This commonality allows for some comparison of results, and enables the formation of broad conclusions for the southern African region.

A combination of descriptive statistics, regression models, Chi-squared tests, Probit models, propensity score matching (PSM), Mann-Whitney U tests and independent sample t-tests were used in the analysis. The data are summarised in tables, charts and various other graphical presentations, with comparisons presented from previous studies. Where multiple responses were given to questions, data is presented as a percentage of respondents giving each response and may, therefore, sum to more than 100%. In certain analyses, for ease of

analysis and comparison, only the definitive 'yes' or 'no' answers are included and may therefore sum to less than the total number of respondents.

The development implications of any ecotourism operation are driven by the demographics of the related community. For this reason and to give context to the remainder of the study, a summary of the main demographic and other socio-economic variables analysed in the study has been included in Appendix F.

4.5.1. PROPENSITY SCORE MATCHING (PSM)

An analysis of ecotourism employment's impact on rural household incomes and an analysis of dependencies and expenditures is provided in Chapter Five. It was surmised that there may be certain factors differentiating staff from non-staff respondents, which enabled staff to gain employment. Education is obviously a key factor in terms of employment, as are the required skills and experience, and a motivation or desire to engage in formal, permanent employment. The latter two attributes are difficult to measure and were not included in the interview schedule. In order to find non-staff respondents who were 'statistical siblings' of staff respondents propensity score matching (PSM) was used. PSM can be used to address selection bias and to account for counterfactuals related to employment with WS. PSM is useful for estimating treatment effects (whether or not employed with WS) in observational studies when the dimensionality of the observable characteristics is high (Rosenbaum & Rubin, 1983). The goal of matching is to find an adequate untreated (not employed by WS, in this thesis 'non-staff respondent') control group that is similar to the treated group (employed with WS, in this thesis 'staff respondent') in all relevant pretreatment characteristics. 'Similarity' is defined by the assigned propensity score, which is the conditional probability of assignment to a particular treatment, given a specific vector of observed covariates (Rosenbaum & Rubin, 1983).

In matching, there are a number of different methods to select the control group once propensity scores are estimated (Fiatt, 2009). This study used kernel matching, i.e. it uses weighted averages of all individuals in the control group to construct the counterfactual outcome (Caliendo & Kopeinig, 2005). This method was used as it results in lower variance because more information is used, but it does run the risk of including observations that are bad matches (Caliendo & Kopeinig, 2005). Matching using estimated propensity scores has the advantage of comparing two similar groups; the effect of being employed by WS is estimated by comparing one respondent who had the propensity to be employed, and was,

with a respondent/s who had the same (or very similar) propensity to be employed by WS, but was/were not.

There are a number of advantages to using PSM:

i) It is possible to determine how well the treatment and control groups overlap and therefore estimations are less sensitive to the choice of functional form of the model (Rosenbaum & Rubin, 1983; Dehejia & Wahba, 2002).
ii) The variance of the estimate of the average treatment effect will be lower in matched samples, compared with random samples, as the distribution of the covariates in the treated and control groups are more similar in matched than random samples (Fiatt, 2009; Rosenbaum & Rubin, 1983).
iii) Unlike standard techniques, matching avoids extrapolation to portions of covariates where there is no data (Fiatt, 2009).

There are however some caveats that attach to using PSM (Fiatt, 2009):

i) There must not be observable factors affecting the outcome that are correlated to the presence of the treatment.
ii) There must be observable factors that were present in both the treated and untreated group before treatment.
iii) There can be a decrease in the number of observations because unmatched observations are dropped. This can reduce the sample size considerably and one may lose important information from the dropped observations.

Various permutations of PSM were run with different combinations of variables, but it was found that, in our context, there were insufficient observable factors to include in the matching, and the loss of observations decreased the quality of the analysis. For example, 'number of children' can affect the propensity to engage in the labour force, especially for females, but we did not have data for the number of children for staff respondents before they were employed in tourism. The only pre-employment variable in this study was 'number of years formally educated.' It was felt that this inability to match treated and untreated adequately would lead to greater bias in the model than using traditional Ordinary Least Squares (OLS). The PSM was found to underestimate the impact of ecotourism employment on household incomes. The OLS results also provide a richer understanding of the factors impacting rural household incomes than provided by PSM. As the income regressions were at a household level it was also felt that matching on individual respondents, who were not

necessarily the household head or main income-earners in the household, would result in a loss of important observations and data. OLS is therefore used in Chapter Five, but PSM results (matching with 'age' and 'number of years formally educated'[17]) and the effect of treatment (being employed by WS) are included for comparison purposes.

The dependent variable used in the OLS is the natural log of monthly household income and is a continuous variable. The main independent variable is dichotomous; whether the respondent was employed by WS or not. A number of other independent (control) variables considered to play a role in determining household income were also included. These are listed in Table 22 on page 85. Some of these variables are continuous (e.g. age), while others are dichotomous (e.g. gender, family employed in tourism or conservation).

The *a priori* thinking on which the selection of variables for the regression and Probit models was based drew on a literature review and the author's personal observations of factors which appeared to influence household incomes and attitudes. Where this led to variables being excluded from a particular country analysis, a note is included.

4.6. ASSUMPTIONS AND LIMITATIONS OF THE STUDY

Although every effort was made to ensure the interviews and data analysis were conducted correctly, certain assumptions and limitations of the research necessarily arise. In terms of the data analysis, particularly the regression and Probit models, there are specific limitations to be considered; these are included in sections 4.6.7. to 4.6.11.

4.6.1. LIMITATIONS OF CROSS-CULTURAL RESEARCH

Cross-cultural research can have limitations in terms of respondents reacting or answering differently due to the presence of an expatriate working in a developing country that was previously colonised (Bruyere, Beh & Lelengula, 2009). It was hoped that the use of local translators (who received informal training from the author) would help minimise this limitation. The author and other interviewers (where not local) also made efforts to learn some of the local language and customs, to greet respondents in their own language, and to help them feel relaxed.

[17] Ideally, gender should be included, but as there were, in general, more male staff respondents and more female non-staff respondents, including gender resulted in a loss of too many observations.

4.6.2. LIMITATIONS OF INTERVIEWS

de Boer and Baquete (1998) warned that formal questionnaires become a drawback when people are unwilling to express negative opinions or attitudes to a third party, in particular where interviewees are reluctant to confess to illegal exploitation practices, such as snaring or collecting plants in a restricted area. Questionnaires are, however, a cost-effective method of research. This, and the fact that people's behaviour is not always congruent with their beliefs, need to be kept in mind when analysing the data collected on opinions and attitudes to tourism and conservation in the present study. That negative attitudes were expressed by some respondents suggests that they did not feel constrained. In order to minimize bias and inaccurate information, respondents were also informed at the beginning of the interview that it was anonymous, was part of a research study, and that their responses would be aggregated and impossible to identify in the larger study.

Interviews run a number of other risks including the researcher leading the respondent, variation in the delivery of the survey between interviewers, respondent anticipation or desire to please the researcher, and discrepancies between what people report and what they actually do or feel (Borgerhoff-Mulder & Caro, 1985, as cited in Gadd, 2005; de Boer & Baquete, 1998; Gadd, 2005). Despite this, surveying attitudes and quantifying them is necessary if one is to compare attitudes towards conservation and ecotourism in different regions or within the same region over time (Gadd, 2005). Every effort was made to keep the interviews uniform and to ask questions in such a manner as to reduce bias or at least keep it consistent. In order to render any existing bias relatively constant, the author conducted over 1000 of the interviews herself. Eight other interviewers assisted across the six countries.

4.6.3. LIMITATION TO SCOPE OF THESIS

This study focused primarily on the first round of ecotourism expenditure; staff spending their salaries in the community. It did not take account of any further rounds of spending or of spending done by the ecotourism operator in terms of lease fees or supplies and, therefore, no estimate was made of the multiplier effects of ecotourism in these remote rural areas. Multiplier studies typically run into problems with double-counting and were, therefore, explicitly excluded to assess direct impacts.

4.6.4. RECALL BIAS

Ellis (1998) points out that the timing of surveys and the accuracy of recall of crop sales and prices can impact on survey results. Recall of randomly timed household income sources (for example the sale of a chicken, once-off casual labour) can also prove to be problematic. This recall bias could be present in the income and expenditure sections of the present study, but with including both it was hoped that a truer estimate would be obtained.

4.6.5. LACK OF A CONTROL COMMUNITY

There is a lack of a control community; one in which there was no related ecotourism development. It was felt however that the main aim of the thesis was to measure the impact of ecotourism employment not ecotourism per se, and the comparison between 'staff' and 'non-staff' respondents allowed for this.

4.6.6. SMALL SIZE OF ZAMBIAN SAMPLE

The Zambian sample is included in the analysis because, despite being small, it was felt to be relevant and representative of the area where the interviews were conducted. Inferences drawn from the Zambian results should however be viewed with caution.

4.6.7. DIFFERENCES IN SAMPLING IN THE STUDY AREAS

The sample size was not standardized in all study countries (see Tables 3 and 4 on pages 32 and 33) due to logistical constraints in some areas where communities were large. These differences in the percentage of the community interviewed could result in some issues relating to external validity. It was however felt that all sample sizes were sufficient in the areas surveyed and no new information was found after a certain percentage (approximately 100 households) of the community had been interviewed.

4.6.8. MEASUREMENT ERRORS

Although every effort was made at ensuring that sampling was random at all study sites, measurement errors in the aggregated results can occur because of sampling differences. This would affect the values of the independent variables and the magnitude of the marginal effects in the regressions (Macura et al., 2011). It was to overcome this potential limitation, that PSM was investigated in some of the analyses (see pages 56 and 84).

4.6.9. OMITTED VARIABLE BIAS

In analyses looking at employment of the respondent with WS there may be issues of endogeneity caused by omitted variables. For example, there may be unexplained variables, such as ability or motivation that explain why the respondent was employed. It is not possible to control for these unobservable variables. Every effort was made to control for all observable variables, e.g. education level, household size, etc., but it is important to keep in mind non-observable factors which may affect the results.

The interview schedule did not estimate monetary values for subsistence agriculture or use of natural resources, the absence of such values could impact the welfare analysis. The thesis however focuses specifically on cash income and the impact of this on household poverty.

4.6.10. HETEROGENEITY

As a result of the diversity in tourism camps, ethnic groups and different land management systems, issues of heterogeneity could be present. As the main aim of the thesis was to quantify the impacts of ecotourism employment per se, it was felt that these differences added qualitatively to the analysis and provided important analyses of comparisons between different areas and countries.

4.6.11. REVERSE CAUSALITY

Reverse causality also needs to be considered in the regression analyses for household income. It is important to bear in mind that formal education plays an important role in terms of someone acquiring formal employment in the first place. This in turn affects their ability to earn a steady income. It is therefore important to emphasise here that the analyses in this thesis are not claiming causality, but rather correlation (association) between different factors.

CHAPTER FIVE - HIGH-END ECOTOURISM IN AFRICA: THE ROLE OF TOURISM-RELATED EMPLOYMENT IN POVERTY REDUCTION

This chapter provides an understanding of how households living around conservation areas diversify their livelihoods, what factors impact their household incomes, how they spend their money, and the various coping strategies they use. Hartter, Goldman and Southworth (2011) make the point that such knowledge can improve our understanding of resource management and the various interactions between communities, parks and ecotourism operations and, through this, can improve the management of parks and ecotourism operations.

The chapter begins with a survey of the literature related to tourism employment and livelihoods in Africa. Readers familiar with the topic can proceed to section 5.2. on page 69 without any loss of understanding.

5.1. INTRODUCTION AND LITERATURE REVIEW

As outlined in Chapter Two, large parts of rural southern Africa are characterised by high levels of unemployment and poverty, with few alternative livelihood strategies available. The more agriculturally marginal such areas are, the more likely are poor households to rely on natural resources for survival; a reliance that can impose heavy pressures on the resources (Ellis, 1999). Among the natural resources in some areas, are landscapes, fauna and flora that are suited to the ecotourism industry.

The capacity of ecotourism enterprises to reduce poverty in such areas varies from region to region. The basic impact can be augmented by a number of other factors tied to the enterprise's own policies, for example the managerial style and choice of labour intensity, both of which have a direct impact on employment. Further to these can be added the associated knock-on effects; the use of local suppliers for goods and services, any equity agreements between the enterprise and the community, any community levies paid by the enterprise and the extent of philanthropic efforts. Exogenous factors can also play a role; examples include the overall economic situation in the country, population density and various historical and cultural factors.

In a study of the impacts of Madikwe Game Reserve in South Africa, Relly (2004, as cited in Rogerson, 2006, p. 54) noted that "*the wages earned from the formal lodge industry in a*

protected area are the single most significant contribution towards poverty alleviation and local economic development and will continue to be so for some time." Similarly, Stronza (2007) and Stronza & Pêgas (2008) stress the overall importance of secure permanent employment that provides a more reliable income stream than other livelihood activities such as agriculture, casual labour or hunting. It is, therefore, important to assess ecotourism employment's impact on household incomes, poverty reduction and local economic development in remote rural areas where it is located: this will be the focus of this chapter.

Whilst conducting interviews the author noted that one permanent job (not necessarily in ecotourism) in a household appeared to significantly improve its general social welfare. These households were noticeably characterized by household durables such as cellphones, generators and motor vehicles. These are not only sources of utility; they also act as capital goods, improving communication and access to markets. Personal observations in the course of this research suggested that reliable income allows families to plan for the future and, even though individuals can sometimes earn more income in a variety of other subsistence activities, the knowledge that they will have a set salary each month and that family members will have income to meet all the basic household needs is a distinct advantage (also found by Stronza, 2007).

If markets are functioning efficiently and effectively they allow opportunities for trade and exchange which, in turn, increases the circulation of cash in rural areas and gives the poor greater opportunities to find ways to lift themselves out of poverty (Ellis, Kutengule & Nyasulu, 2003; Ellis & Mdoe, 2003; Freeman, Ellis & Allison, 2004). Evidence of this was seen in the study areas where small shops had been established to offer goods and services to employed individuals (largely ecotourism staff) in the area. Local villagers also mentioned the benefit of employment in the fields or households of employed ecotourism staff.

Livelihood strategies in which households engage are important in terms of overall poverty reduction. In order to provide context for the remainder of the chapter, the following section offers a general discussion of these strategies in Africa.

5.1.1. LIVELIHOOD DIVERSIFICATION STRATEGIES IN SOUTHERN AFRICA

Survival is an imperative and in rural areas the environment is a source of consumer goods. Poverty therefore increases the stress on local ecosystems. Increasing household income and livelihood diversification can reduce such pressures. Ecotourism can assist in both regards,

lowering household risk and uncertainty and providing households with income and assets to diversify their livelihoods further. Freeman et al. (2004) found that the rural poor in Kenya tend to be trapped in subsistence agriculture allowing them little scope to move out of poverty; their lack of cash income reduces the range of opportunities open to them. Reducing household dependence on crop and livestock production is part of the process of helping them out of poverty (Freeman et al., 2004); however reliance on so unstable an income source as ecotourism can also be risky.

Text Box 3: Livelihoods and livelihood diversification

A livelihood is the manner in which a person supports themselves, their household or both. The particular livelihood/s that households choose are determined by a number of factors including; culture, traditions, economic conditions, environment and local demography (Chambers & Conway, 1991, as cited in Harrter et al., 2011). It is not always possible for households to secure their own livelihoods in the face of external factors beyond their control. Some of these observed in this study (and found by Vedeld et al., 2012) include land access and tenure policies; market access; inadequate transport and road networks; weak and/or corrupt institutions; human-wildlife conflict; imperfect markets; and asymmetric power relations.

There are a number of different definitions of livelihood diversification. This thesis will follow Ellis (1998) and Niehof (2004) in defining livelihood diversification as the process by which households construct a diverse portfolio of activities in order to survive, making use of diverse combinations of resources and assets.

Ellis (1998, as cited in Bryceson, 1999, p. 11) states that "*the prime motive and consequence of successful diversification is to reduce vulnerability,"* but he insists that it is important to distinguish between 'rational risk-management' and 'default coping strategies.' Bryceson (1999, p. 11) stresses the voluntary aspect of household risk management through diversification, i.e. varying income sources to spread risk over time and to ensure smooth consumption. A 'coping strategy,' on the other hand, is generally involuntary, being invoked out of necessity and generally without planning. 'Adaptation' occurs as a more reasoned response; it encompasses all changes to permanent livelihoods as a result of changing circumstances in the environment, economy or both (Bryceson, 1999). Successful coping strategies can be adapted to protect households against future environmental and economic shocks. Ellis (2000) made the point that households diversify their livelihood strategies either through choice or necessity. If households are able to diversify out of choice through ecotourism, it may reduce the pressure to diversify out of necessity in the future.

Where rural households choose to diversify, they do so for many reasons including, i) as a response to market failures (e.g. a lack of credit markets in rural areas and therefore no opportunities to access loans), ii) failure of any one activity to provide enough income, iii) different skills and attributes of individual household members or, (iv) a desire of household members to engage in different livelihood strategies to reduce household risk (adapted from Davis, Winters & Carletto, 2009).

Ellis and Allison (2004) and Igoe (2006) describe five different forms of capital (assets) that affect the success or failure of such attempts at livelihood diversification; human capital (skills, health, education, capacity), physical capital (infrastructure), financial capital (money, savings), natural capital (land, water), and social capital (networks, institutions). A household's access to these determines the options available to them. Ecotourism has the ability to add to each of these 'capitals' and, therefore, to provide individuals and households with a broader range of livelihood options in the long run.

One factor differentiating the poor from the better-off in rural societies is the ability of more affluent households to 'trade-up' assets in sequence, for example, to use cash from non-farm income to buy farm inputs to earn higher income to buy land, livestock or both (Ellis & Bahiigwa, 2003; Ellis & Mdoe, 2003; Freeman et al., 2004). It was in this regard that ecotourism employment was observed to assist rural households in diversification; the security of a permanent, monthly income allowed households to invest in assets which, in the long run, can cushion them against future economic shocks. One example is education. In some cases, such as in Malawi, children are not allowed to attend school if they do not have a uniform. Ecotourism staff's ability to buy uniforms for their children also, therefore, ensures that they receive an education. Investing in the education of one's children can be seen as a long-term livelihood diversification strategy, being an investment in the future resource base of the household, with the hope of future income returning to the parental household (Ellis, 1998; Niehof, 2004).

Across all study areas agriculture (crop production/subsistence farming and livestock keeping) was the core activity for most households. A more detailed analysis however showed a range of other income sources. The earnings remitted by family members elsewhere was one, and another was government grants. Certainly, the study areas accorded with Ashley's (2000) observation that while agriculture is a core activity for the majority of rural households in Africa, it is the sole activity for very few. As found by Roe and Elliott

(2006), it was also observed in this study that the majority of households had complex, diverse livelihood strategies based on multiple land uses, many of which involved the use of natural resources; for trading (e.g. wood, thatch, crops, wild fruits), supplying inputs (e.g. for craft making), and/or for formal or informal employment (e.g. in tourism). In an agricultural area such strategies help with 'idiosyncratic' risks, i.e. those risks unique to the individual household and its particular circumstances, but not generally with 'common' or 'community-wide' risks.

Where small-scale farmers sell their produce the market and other exogenous factors introduce additional elements of risk; the amount of farm production is affected by climate, rain, animal damage, disease, and the value of farm production is affected by the prices obtained, which can also be highly variable from year to year (Ellis, 1998). This was observed in the Malawi interviews where total household incomes were significantly affected by the market price of cotton each year as numerous households relied on this cash crop for survival.

The loss of access to land when it is transformed to conservation can, therefore, impose a number of direct and indirect costs on local communities, including opportunity costs of foregone production on it (Ashley & Roe, 2002; Barrow & Murphree, 2001; Mbaiwa, 2005b; Roe & Elliott, 2006; Steenkamp & Uhr, 2002) and, therefore, reduce household livelihood options. A conservation strategy that precludes traditional land uses imposes costs on households, while strategies that allow access (either for traditional harvesting of natural products or for grazing during drought periods, e.g. in the Namibia study area) could help in risk reduction. Such access, combined with ecotourism in the area, offers a net benefit and a reduction in risk.

Permanent employment in ecotourism often means occupational substitution rather than diversification and the household remains reliant on one income source. One response to this problem is the suggestion that ecotourism should aim to induce households to change their agricultural or pastoral practices gradually (Coupe, Lewis, Ogutu and Watson, 2002, p. 35). This would reduce conflict over natural resources and encourage a community-level move away from reliance on one income source.

Ellis (1998) and Stronza (2007) found that households were generally risk averse and therefore prepared to accept lower income in exchange for greater security. This may explain

why many rural people remain in jobs that are relatively low paying, but are permanent and therefore offer a secure, reliable income flow. They may be avoiding high-paying seasonal jobs and self-employment, as these are risky. This was observed in the study areas where local people, despite having the option of engaging in small-scale agriculture, remained in relatively low-paying, but secure, jobs in ecotourism (e.g. camp hands, scullery, etc.) and other village occupations, e.g. house cleaners, childminders.

In summary, Ellis & Allison (2004, p. iv) emphasise that livelihood diversification lessens poor household's vulnerability to food insecurity and livelihood collapse, allows the basis for the acquisition of assets (allowing individuals and households to develop their own routes out of poverty), and it can improve the quality and sustainability of natural resources that are some of the key assets in rural livelihoods. They state that this occurs because by broadening the options available to individuals, diversification reduces reliance on certain natural resources, it encourages spatially diverse transactions between individuals and households, it increases the cash in circulation in rural areas and it enhances human capital by providing those who engage in it with new skills, experiences and abilities; this chapter illustrates how ecotourism offers such diversification.

According to Ravallion (1992, as cited in Ellis, 1998) the actual composition of rural household incomes is relatively poorly researched compared to other aspects of rural livelihoods. Gartner and Cukier (2011, p. 2) also emphasise that "*much remains to be understood about how tourism development processes unfold at the household level in specific environments.*" They also state that there is a "*void of research upon the influence of economic impacts on poverty conditions at the intra-household level."* This section of the present study aims to fill these information gaps by providing a better understanding of the income sources available to rural households, the composition of rural household incomes, how ecotourism and other factors impact incomes, and the patterns of household spending.

It will also focus on inequality. Blake, Arbache, Sinclair & Teles (2008) found that tourism benefited the lowest income sections of the general Brazilian population and therefore had the potential to reduce income inequality overall. However, they ignored its impact on the *local* inequality that arises when ecotourism employment benefits some sections of the community more than others, especially those not directly employed.

5.2. RESPONDENTS' MAIN HOUSEHOLD INCOME SOURCES

The remainder of this chapter analyses the results from the interview schedules and looks at the composition of rural household incomes and expenses, how many people are indirectly impacted by ecotourism employment and the overall impacts on household welfare.

With respect to income, respondents were asked their monthly household income and their main and secondary household income sources. Mann-Whitney U tests were used to assess the statistical significance of differences between groups, and regression analyses were used to determine the factors impacting household incomes.

A diversity of household income sources was found in all areas, with some people being particularly entrepreneurial. One female respondent in Malawi had purchased a small solar panel and was charging other villagers a fee to use it for charging mobile phones and radio batteries. Piecework and casual labour were also common sources of income in these rural areas. In some cases, cash did not change hands for piecework but people were paid in-kind, usually with food (this was frequently observed in Zimbabwe, Zambia and Malawi). This is obviously not reflected in household income figures, but contributes to household survival. In the Namibian sites, livestock were central to the survival of households both as a source of cash from their sale, and of products for household use (milk, meat, animal hides).

Table 9 highlights the centrality of formal, salaried employment, of any kind, as the major source of income for households in remote, rural areas. For non-staff households the most commonly observed source of cash income was employment of a family member or spouse (19.5%), highlighting the importance of formal employment, of any kind, in these rural areas. The other main sources were; government grants/pensions (11.2%), their own formal job (8.1%), selling livestock (7.8%), piecework (6%) and farming/agriculture (7.6%).

For the majority (94%) of staff respondents, the main household income source was their salary in ecotourism, with 2% getting it from another employed family member or spouse. This heavy reliance of staff respondents on their salary as the main support for their household is of itself a source of risk for the household due to the vulnerability of the ecotourism industry (see Text Box 2 on page 25). Unfortunately there are few alternative income-earning opportunities in the area, though the problem may be accentuated by income targeting; the income earned from ecotourism employment being seen as 'sufficient.'

Table 9: Household income sources for staff and non-staff respondents by location

National group sampled	Main household income source	Second most important household income source
Botswana – staff	Job (97%)	Other* (2%)
Botswana – non-staff	Family/Spouse (25.7%)	Casual labour (19.2%)
Malawi – staff	Job (97.4%)	Family/Spouse (1.3%) & Weaving (1.3%)
Malawi – non-staff	Farming (32.3%)	Business (13.9%)
Namibia – staff	Job (83.3%)	Other* (11.9%)
Namibia – non-staff	Selling livestock (24%)	Employment (15.5%)
South Africa – staff	Job (90.3%)	Family/spouse (8.1%)
South Africa – non-staff	Government Grant (47.7%)	Family/spouse (25.5%)
Zambia – staff	Job (100%)	N/A
Zambia – non-staff	Family/Spouse (35.8%)	Piecework (13.4%)
Zimbabwe - staff	Job (100%)	N/A
Zimbabwe – non-staff	Piecework/Jobs (22.7%)	Family/Spouse (22.6%)

*'Other' included: personal pensions, brewing beer, etc.

5.3. HOUSEHOLD INCOME DIVERSIFICATION LEVELS

Looking at the entire set of households interviewed, the non-staff respondents (who, as will be shown later, had lower average monthly household incomes) had a marginally higher mean number of household income sources (n=1386; M=1.57, min. 0; max. 6, mode 1) than staff respondents (n=385; M=1.52, min. 1; max. 6, mode 1). However, the difference was not statistically significant. Table 10 shows the mean number of household income sources for staff and non-staff respondents in each country, and whether or not there was a statistical difference between them: illustrating levels of diversification.

Table 10: Mean number of household income sources for staff and non-staff respondents by location

National group sampled	Sample size (n)	Mean number of household income sources	Statistical significance
Botswana – staff	99	1.12	NOT SIGNIFICANT
Botswana – non-staff	261	1.23	
Malawi – staff	74	1.47	NOT SIGNIFICANT
Malawi – non-staff	251	1.36	
Namibia – staff	81	1.72	NOT SIGNIFICANT
Namibia – non-staff	267	1.55	
South Africa – staff	61	2.18	U=7924, Z= -2.457,
South Africa – non-staff	319	1.90	p<0.05. r= -.126
Zambia – staff	15	1.53	NOT SIGNIFICANT
Zambia – non-staff	67	1.63	
Zimbabwe - staff	55	1.31	U = 4455, Z= - 3.268,
Zimbabwe – non-staff	221	1.73	p<0.05, r= - .196

The mean number of income sources varied considerably across sites; moreover staff households sometimes had more and sometimes less than households of non-staff respondents. South African staff respondents had the highest mean number of household

income sources (2.19), followed by South African non-staff respondents (1.9) and Zimbabwe non-staff respondents (1.73). The high numbers in South Africa may be related to the greater household wealth available and consequent ability to invest in income-generating assets and other livelihood opportunities, however, a considerable impact came from the fact that many households were receiving a government grant of some kind (75% of South African non-staff respondents and 63% of staff respondents were in households that received at least one government grant every month).

Although permanent employment in ecotourism can be a substitute for other earning activities (e.g. agriculture), it appears that it may also stimulate different earning activities by providing opportunities to accumulate productive capital (for example, cattle/cars/sewing machines/solar panels, etc.). This productive capital can then provide an income effect that may even outweigh the substitution effect. In some cases, the family kept cultivating some land, but may not have been selling the produce; it was still contributing to real income though.

5.4. DEPENDENCY: NUMBER OF PEOPLE INDIRECTLY IMPACTED BY ECOTOURISM EMPLOYMENT

Before moving on to a detailed analysis of household incomes it is important to look at the number of people respondents were supporting, financially or in-kind. The limited formal employment opportunities in remote, rural areas means that those who do find employment are often supporting a number of people, both direct family as well as others. HIV/AIDS, and the resultant high number of orphans, often increases the number of dependents supported. This was observed in all study areas, but was especially apparent in Malawi, Zambia and Zimbabwe.

Table 11 shows a statistical difference in the dependency ratios of staff and non-staff respondents in all countries; with staff typically having more dependents. These high dependency ratios indicate the breadth of ecotourism's indirect impact among local communities in these areas. Many staff respondents in Botswana[18] mentioned leaving their bank cards with family members who draw cash for the household when needed while they are away at work; further emphasising household reliance on ecotourism income in these areas.

[18] Staff in Botswana work three months on, one month off.

Table 11: Average number of dependents at each study site

National group sampled	Staff (n=385)	Non-staff (n=1359)	Statistical significance	Average (n=1744)
Botswana	8.11(min. 0, max. 22)	5.09 (min. 0, max. 36)	U = 7224, p < .001	5.91 (min 0, max. 36)
Malawi	7.93 (min. 1, max. 19)	4.24 (min. 0, max. 17)	U = 3584.4, p < .001	5.14 (min. 0, max. 19)
Namibia	6.05 (min.0, max. 15)	6.02 (min. 0, max. 100)	U = 9000, p < .05	6.02 (min. 0, max. 100)
South Africa	6.16 (min. 1, max. 15)	3.85 (min. 0, max. 29)	U = 5290.5, p < .001	4.22 (min. 0, max. 29)
Zambia	7.27 (min. 3, max. 12)	5.66 (min. 0, max. 20)	U = 324.5, p < .05	5.95 (min. 0, max. 20)
Zimbabwe	8.11 (min. 1, max. 18)	5.35 (min. 0, max. 17)	U = 2984.5, p < .001	5.91 (min. 0, max. 18)
Average	**7.30 (min. 0; max. 22)**	**4.9 (min. 0; max. 100)**	**U = 151 382, p < .001**	**5.43 (min. 0; max. 100)**

There was a significant statistical difference found between the mean number of dependents for all staff (M=7.3) and all non-staff respondents (M=4.9) [U = 151 382, p < .001]. A high number of dependents tends to erodes savings and although ecotourism staff should be able to accumulate wealth they are often unable to do so because they support a greater number of people. The Managing Director of the Malawi operation discussed this issue with the author and introduced a pension system for staff to institutionalise saving. In the author's experience, however, the pension deduction is frequently seen negatively as a loss of immediate cash income, rather than as a saving.

Table 12 details the number of people indirectly impacted by the ecotourism camps in this study, as well as the financial impact of this. The table shows that 16 camps in southern Africa are indirectly impacting nearly 5000 people's lives; equivalent to 14 people per tourism bed[19] (at 100% occupancy). This is substantial considering the rural nature of the areas where the camps are situated, the lack of permanent employment and high levels of poverty. Employees of the camps are averaging total transfers of USD19 per month to dependents; almost USD13 000 is paid monthly. This excludes money given for education, food, and other living expenses. In terms of the number of jobs per camp, the figures above give an approximate number of 43 direct jobs per tourism camp studied (this will obviously depend on the camp size) or 2 direct jobs per tourist bed (at 100% occupancy). These figures are important in terms of future tourism developments in rural areas, as they can assist tourism operators in providing average figures for tender documents and for determining the impact their operations may have in rural areas.

[19] This result is, however, affected by the findings in Botswana (27 people/bed). The result is high in Botswana, largely due to the high cost of the tourism product at the Botswana study sites and, therefore, high number of staff employed.

Table 12: Number of people indirectly affected by ecotourism employment

National group sampled	Total no. of staff in the surveyed camps	Average stated monthly wage per staff member (USD 2011)[1]	Average no. of dependents per staff respondent	Total no. of people indirectly impacted by camp employment[2]	Average stated monthly amount given to dependents per staff respondent (USD 2011)[3]	Total payments to dependents per month (USD 2011)[4]	Approximate number of people indirectly impacted per tourism bed
Botswana (3 camps surveyed – 52 beds)	173	220.01	8	1384	$39.03	$6752.19	27
Malawi (2 camps surveyed – 50 beds)	108	83.73	8	864	$5.78	$624.24	17
Namibia (4 camps surveyed – 104 beds)	166	172.65	6	996	$31.64	$5252.24	10
South Africa (2 camps – 64 beds)	94	319.94	6	564	$20.21	$1899.74	9
Zambia (1 camp – 18 beds)	23	159.40	7	161	$6.15	$141.45	9
Zimbabwe (4 camps – 64 beds)	119	216.87	8	952	$11.30	$1344.7	14
Average/Total (16 camps – 352 beds)	**683**	**USD 195.43**	**7**	**4921**	**USD 19.02**	**USD 12 990.66**	**14**

[1]Over and above wages employees receive gratuities (not included in this analysis) as well as other non-monetary benefits of employment such as accommodation, food, uniform, and a company HIV awareness/testing and education programme. These figures are based on data from the socio-economic interview schedules and are not official wage figures; they are based on the salary figures given by respondents. These figures have been inflated to 2011 values.
[2]This result is calculated by multiplying the number of people employed in the surveyed camps by the calculated average number of staff dependents. All figures are rounded up.
[3]These figures were obtained from the expenses section of the interview schedules conducted in the study countries.
[4]These figures were calculated by multiplying the total number of staff by the total monthly payment to dependents.

5.4.1. FAMILY EMPLOYED IN TOURISM AND/OR CONSERVATION

In order to determine the overall economic reliance on tourism and conservation in these rural areas respondents were asked if they had any family employed in tourism, conservation or both. Table 13 provides a breakdown of responses in each country.

Table 13: Percentage respondents who had family employed in tourism and/or conservation by location

National group sampled	% respondents who had family employed in tourism and/or conservation
Botswana – staff (n=99)	40%
Botswana – non-staff (n=245)	50%
Malawi – staff (N/A)	Not included in interview schedule
Malawi – non-staff (n=249)	22%
Namibia – staff (n=81)	62%
Namibia – non-staff (n=265)	57%
South Africa – staff (n=61)	38%
South Africa – non-staff (n=329)	34%
Zambia – staff (n=15)	73%
Zambia – non-staff (n=67)	81%
Zimbabwe – staff (n=55)	58%
Zimbabwe – non-staff (n=218)	56%

Fifty percent of staff respondents said they had a family member employed in tourism and/or conservation, compared to 46% of non-staff respondents. These family members may or may not have been in the same household as the respondent and may have been employed outside the country. For the whole sample, 47% of respondents had family employed in tourism and/or conservation, indicating that a number of households had family benefitting financially from tourism and/or conservation. This figure is important considering the overall lack of permanent employment in these areas. This result, however, needs to be interpreted with caution in terms of total employment impact, as a number of respondents may have been closely- or distantly-related in the villages and may have been referring to the same employed family member.

5.5. OVERALL ANALYSIS OF STATED MONTHLY HOUSEHOLD INCOMES

A problem with the interview schedule used is that it relies on respondents' recall and honesty. An analysis of official salary figures, in section 5.5.1. on page 80, was therefore used to validate staff respondents' stated salaries. The analysis showed that, in general, respondents' recollections were correct.

Table 14 breaks down stated monthly household incomes for staff and non-staff respondents in each country and indicates that earnings of ecotourism staff were statistically higher than those of other community members in all countries. The value of subsistence and in-kind income is, however, not recognised in these figures. Houses built with local materials and food grown and gathered locally, contribute to real income and wealth, but are excluded from the income statistics.

Table 14: Mean monthly household income for staff and non-staff respondents by location

National group sampled	Sample size (n)	Mean stated monthly household income (USD 2011)	Mean monthly log income (USD 2011)	Statistical significance (log of income/employment)	Purchasing power parity conversion for mean stated monthly household incomes* (USD 2011)
Botswana – staff	95	290.94	5.26	U = 3382, Z = -10.828, p<0.001	493.12
Botswana – non-staff	251	92.92	3.22		157.49
Malawi – staff	74	102.93	4.39	U = 3172.5, Z= -8.609, p< .001	257.33
Malawi – non-staff	246	47.13	2.89		117.83
Namibia – staff	80	363.85	5.58	U = 5931.5, Z = -6.156, p<0.001	466.47
Namibia – non-staff	257	221.54	4.58		284.03
South Africa – staff	61	544.37	6.15	U = 2927.5, Z = - 8.794, p<0.001	745.71
South Africa – non-staff	313	274.76	4.97		376.38
Zambia – staff	15	218.06	5.08	U = 115, Z = - 4.65, p<0.001	247.79
Zambia – non-staff	63	89.84	3.2		102.09
Zimbabwe - staff	55	308.83	5.17	U = 1200.5, Z = -8.978, p<0.001	Not available**
Zimbabwe – non-staff	206	63.88	3.2		Not available**

*PPP conversion factors were obtained from www.tradingeconomics.com; these figures were taken from a 2012 World Bank report.

**PPP conversion factors were not available for Zimbabwe.

Purchasing power parity conversions show that staff stated salaries are highest in South Africa, followed by Botswana and Namibia, while those in Malawi were in line with Zambia (and probably with those in Zimbabwe).

Figure 5: Purchasing power parity comparison of household incomes

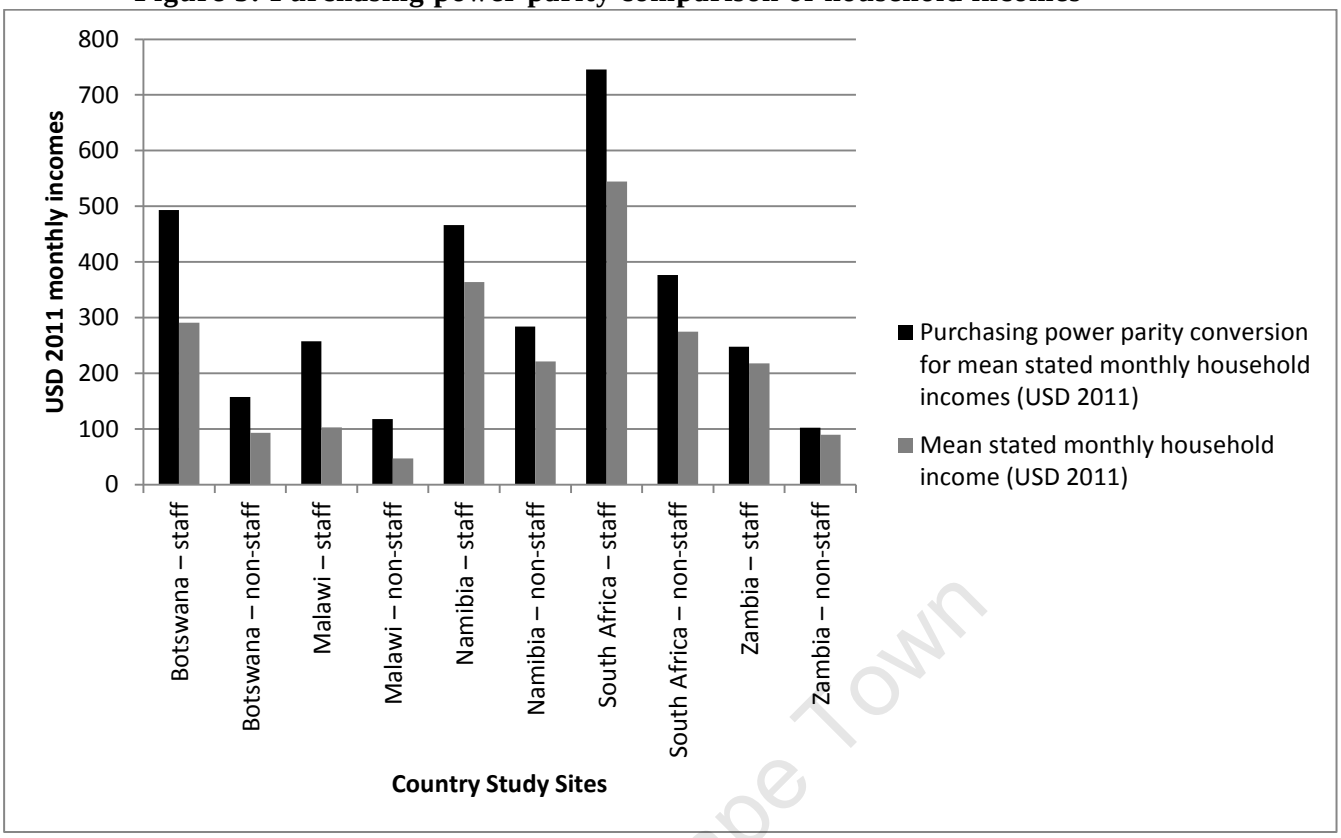


Table 15 breaks down the staff and non-staff household income results further. In all cases in Table 15 mean incomes were higher than the median, suggesting that the means were raised by a few high income households among those interviewed, and the majority of household incomes are, therefore, likely to be lower than the mean.

Table 15: Staff and non-staff income statistics by location

National group sampled	Staff stated monthly household incomes (USD 2011)	Non-staff stated monthly household incomes (USD 2011)	Average stated monthly household incomes (USD 2011)
Botswana	*(n=95)*	(n=251)	*(n=346)*
Mean	290.94	92.92	147.29
Median	195.86	31.71	79.28
Mode	141.55*	0	0
Minimum	103.06	0	0
Maximum	1885.26	1744.14	1885.26
Malawi	*(n=74)*	*(n=246)*	*(n=320)*
Mean	102.93	47.13	60.04
Median	65.70	21.43	36.56
Mode	54.31	7.19	7.19
Minimum	32.37	0	0
Maximum	751.67	899.13	899.13
Namibia	*(n=80)*	*(n=257)*	*(n=337)*
Mean	363.85	221.54	255.32
Median	243.56	135.89	150.98
Mode	182.58*	67.94	67.94
Minimum	63.2	0	0
Maximum	1907.25	2793.16	2793.16
South Africa	*(n=61)*	*(n=313)*	*(n=374)*
Mean	544.37	274.76	318.74
Median	459.69	177.78	216.58
Mode	352.88	157.16	157.16
Minimum	163.71	0	0
Maximum	2262.81	2336.15	2336.15
Zambia	*(n=15)*	*(n=63)*	*(n=78)*
Mean	218.06	89.84	114.49
Median	139.28	32.7	44.87
Mode	102.39	21.8	21.8
Minimum	84.6	0	0
Maximum	1190.93	1961.72	1961.72
Zimbabwe	*(n=55)*	*(n=206)*	*(n=261)*
Mean	308.83	63.88	115.50
Median	130.91	31.17	51.95
Mode	114.29	0	0
Minimum	89.7	0	0
Maximum	3636.5	1039	3636.50

*Multiple modes

Table 16 groups cash incomes of community members in the areas studied into comparable categories.[20] The table shows the extreme regional disparities in incomes; USD incomes in South Africa being much higher than those elsewhere, and those in Malawi being much lower than in the other study countries. Table 16 is graphed in Figure 6.

[20] Income categories were selected by the author based on an analysis of these figures and the desired appropriateness of the categories to the overall understanding of rural household incomes.

Table 16: Income category comparisons for staff and non-staff respondents (USD 2011) by location

National group sampled	0	<50	51 - 100	101 - 200	201 - 300	301 - 400	401 - 500	501 - 750	751 - 1000	1001 +	Missing *
Botswana % Staff	0%	0%	0%	51%	24%	2%	8%	5%	3%	2%	4%
Botswana % Non-staff	10%	47%	16%	13%	4%	2%	1%	2%	0%	1%	4%
Malawi % Staff	0%	18%	51%	23%	5%	0%	0%	1%	1%	0%	0%
Malawi % Non-staff	1%	72%	14%	8%	1%	1%	1%	0%	0%	0%	2%
Namibia % Staff	0%	0%	4%	42%	16%	11%	6%	12%	2%	4%	2%
Namibia % Non-staff	1%	14%	25%	32%	8%	6%	2%	3%	2%	2%	5%
South Africa % Staff	0%	0%	0%	3%	11%	26%	20%	25%	7%	8%	0%
South Africa % Non-staff	0%	5%	12%	36%	17%	11%	4%	4%	3%	3%	5%
Zambia % Staff	0%	0%	7%	80%	0%	7%	0%	0%	0%	7%	0%
Zambia % Non-staff	3%	60%	16%	9%	3%	0%	0%	1%	0%	1%	6%
Zimbabwe % Staff	0%	0%	13%	67%	4%	0%	4%	0%	5%	7%	0%
Zimbabwe % Non-staff	6%	51%	19%	12%	2%	1%	0%	0%	0%	0%	7%

*Missing: includes all cases where the respondent did not know or would not give the total monthly household income.

Staff employed in high-end ecotourism typically have higher stated monthly household incomes than others in the same geographic areas, with South African staff having the highest percentage with monthly household incomes between USD301-USD750. Zimbabwe, Zambia and Malawi have very few staff or non-staff respondents with monthly household incomes over USD300. Accommodation and food are provided at all staff study sites,[21] except for Malawi where the majority of the staff live at home (food is provided when on duty), and in most cases transport to and from the camps is also provided. These aspects of real incomes have not been reflected in these monthly household incomes.

The relatively high incomes of Namibian non-staff households reflect the earning opportunities of the Himba people who live in the study sites in north-west Namibia. This semi-nomadic group sell cattle, mostly to Ovambo people. The result is both higher household incomes, as well as higher dependency ratios, than non-staff respondents in the other study countries.

[21] These additional 'benefits' of ecotourism form about 30% of the company staff costs annually.

Figure 6: Staff and non-staff income groups by location

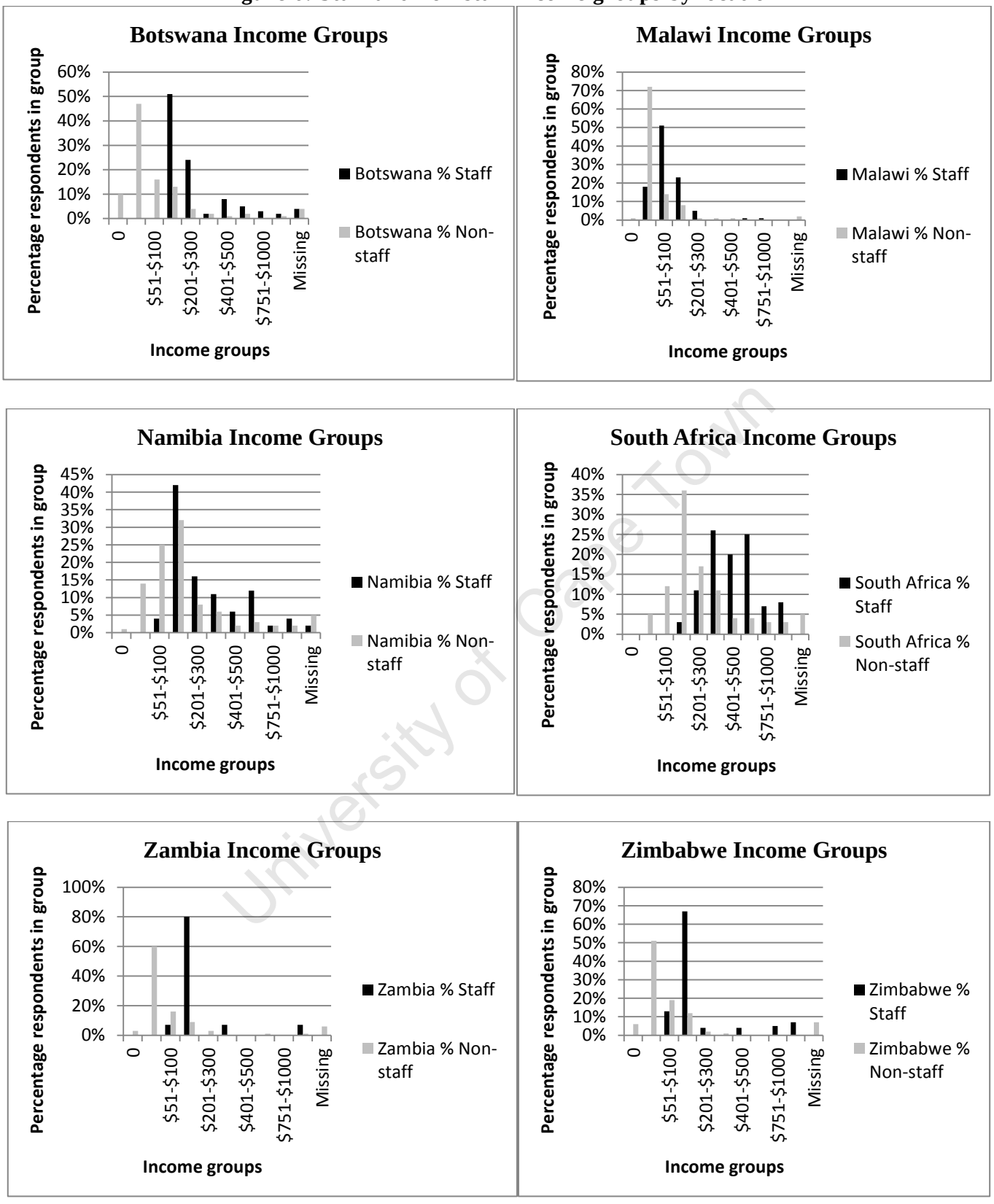


Table 17 shows that, on average, staff respondent households in all countries had higher mean per capita incomes than non-staff respondent households who did not have a family member employed with WS; emphasising the positive, local impact of ecotourism employment on rural household incomes.

Table 17: Calculated per capita incomes* by location (USD 2011)

National group sampled	Mean per capita income for staff respondents	Mean per capita income for non-staff respondents	Statistical significance
Botswana	106.39 (n=99)	21.39 (n=261)	**U = 3090.0, Z = - 11.157, p < .001, r = - .59**
Malawi	20.62 (n=74)	13.99 (n=251)	**U = 4040.0, Z = -7.387, p < .001, r = - .41**
Namibia	62.72 (n=80)	56.58 (n=271)	**U = 7333.0, Z = - 4.398, p < .001, r = - .23**
South Africa	89.31 (n=61)	49.23 (n=329)	**U = 3937.0, Z = -7.541, p < .001, r = - .38**
Zambia	47.06 (n=15)	19.23 (n=67)	**U = 132.0, Z = - 4.445, p < .001, r = - .49**
Zimbabwe	46.64 (n=55)	27.80 (n=209)	**U = 1818.5, Z = - 7.799 p < .001, r = - .48**
Average	**67.17 (n=384)**	**31.92 (n=1385)**	**U = 129548.5, Z = - 15.399, p < .001, r = - .37**

*Calculated using total monthly household income, divided by the total number of people living in the household (see Table 62, page 297).

5.5.1. MEAN STATED AND OFFICIAL SALARIES IN EACH COUNTRY

Figure 7 shows comparative mean stated salaries from ecotourism at the study sites (inflated to 2011 values). The stated amounts are based on salary figures given by staff respondents[22] (not official wage figures). The gross monthly salaries in the graph were calculated from WS wage figures for 2011.[23] There was a broad range of wages in each category, so this amount is an approximation for the job positions surveyed, not an accurate salary figure. Figure 13 emphasises the general reliability of respondents' stated salaries and supports the representivity of the staff sample.

[22] Staff respondents generally gave net salary figures, as that was the figure they remembered: the amount they actually received.
[23] Correcting for deductions, including tax, etc. would make these figures even closer to stated salaries.

Figure 7: Staff sample: Comparative mean salaries from ecotourism at the study sites, stated and official

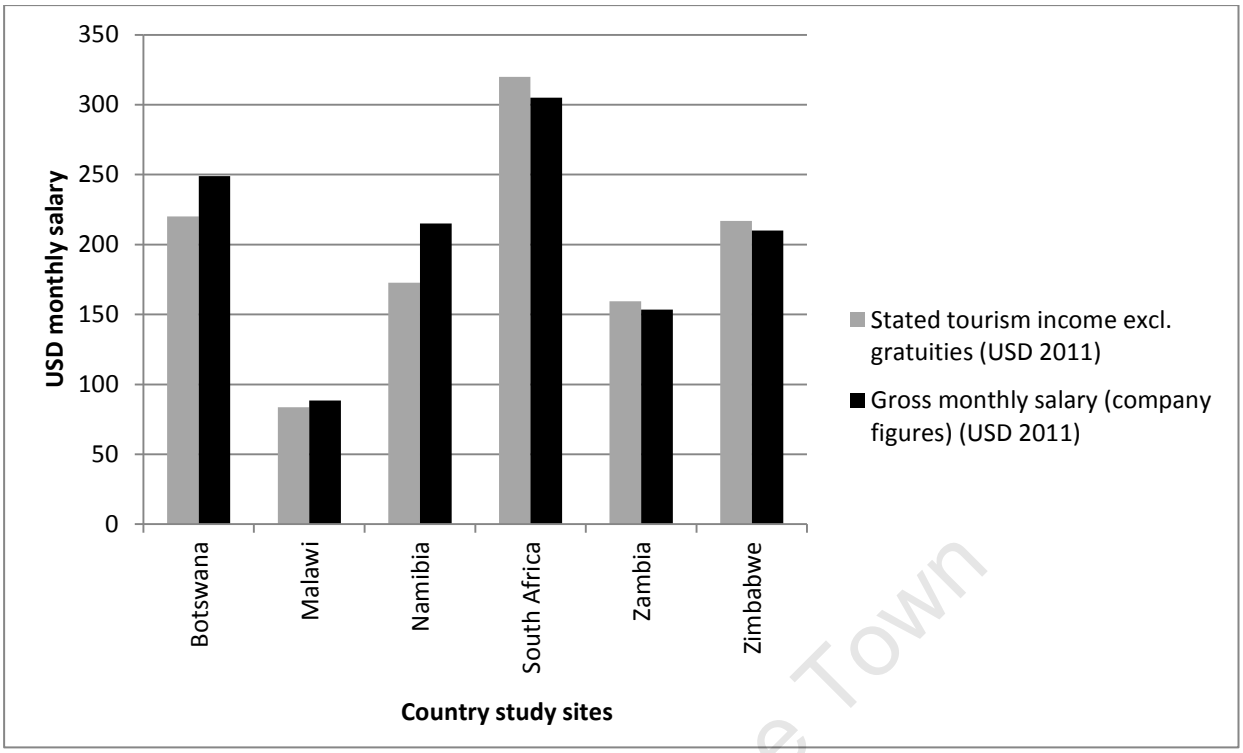


Table 18 illustrates the contribution of stated gratuities to overall ecotourism income (ecotourism salary) in the study countries. In all countries gratuities play an important role in terms of monthly earnings from ecotourism.

Table 18: Contribution of gratuities to staff incomes at the study sites

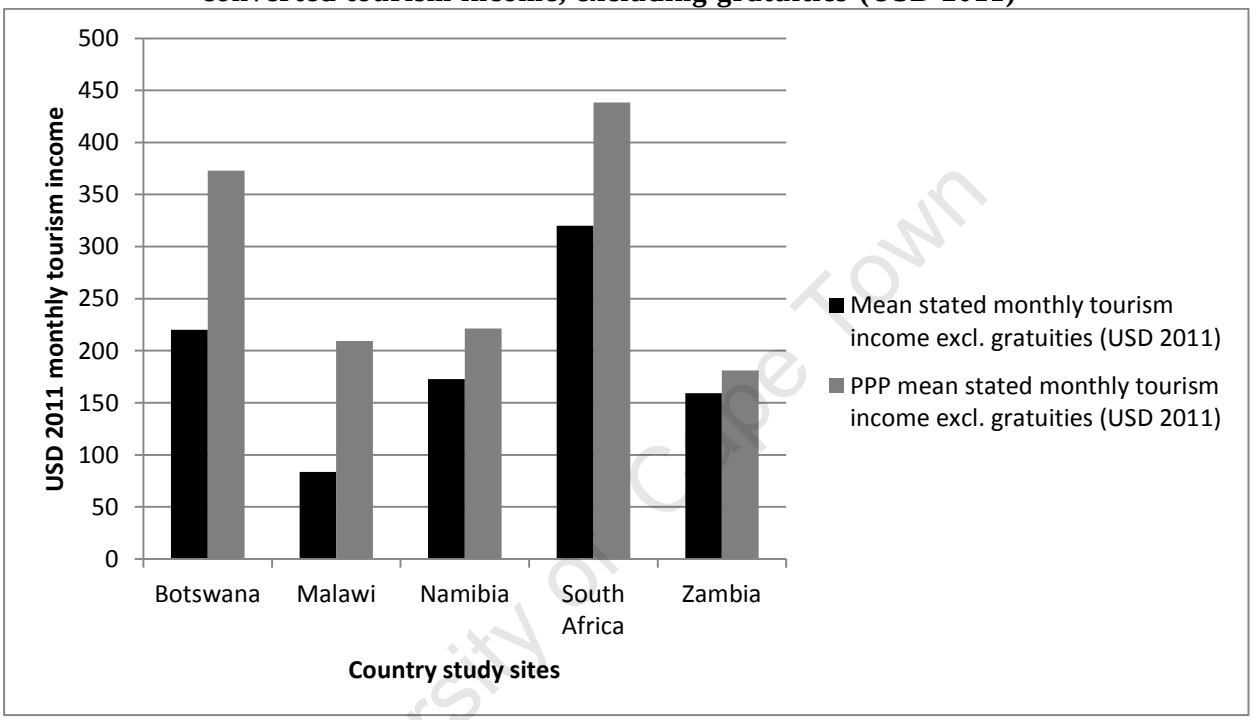
	Botswana	Malawi	Namibia	South Africa	Zambia	Zimbabwe
Mean stated monthly tourism income excl. gratuities (USD 2011)	220.01	83.73	172.65	319.94	159.4	216.87
Mean stated monthly tourism income incl. gratuities (USD 2011)	271.45	91.89	230.84	343.47	199.94	263.95
Average stated gratuities	51.44	8.16	58.19	23.53	40.54	47.08

Despite salaries being lowest in Malawi, staff tenure was found to be the longest. Community development projects resulting from philanthropic donations were more common in Malawi (and also Zimbabwe), resulting in broader community benefits from ecotourism. Salaries in Malawi should also be viewed relative to average non-staff household incomes in Malawi, which were the lowest in the study (see Table 14). Table 19 and Figure 8 show the tourism income results with purchasing power parity conversion factors applied.

Table 19: Staff sample: Purchasing power parity conversion for mean monthly stated tourism income, including and excluding gratuities

	Botswana	Malawi	Namibia	South Africa	Zambia	Zimbabwe
Mean stated monthly tourism income excl. gratuities (USD 2011)	372.89	209.33	221.35	438.27	181.14	No figures available
Mean stated monthly tourism income incl. gratuities (USD 2011)	460.08	229.73	295.95	470.51	227.20	No figures available

Figure 8: Staff sample: Comparison of stated monthly tourism income and PPP-converted tourism income, excluding gratuities (USD 2011)



5.6. ECOTOURISM'S CONTRIBUTION TO HOUSEHOLD INCOMES

Important in understanding ecotourism's role in local socio-economic development is understanding its contribution to household incomes in rural areas.

Computations of ecotourism's contribution to household incomes in these rural areas were based on the staff respondent's stated salaries and their stated monthly household incomes. The contribution was typically substantial. Table 20 shows 59% of staff respondents reporting that their salary in ecotourism made up 100% of their total household income, while 93% reported that it made up more than 50% of their monthly household income. These figures illustrate a heavy reliance of these households on the market economy, in the form of ecotourism, for support. The lower percentage contribution among South African employees reflects the number of households receiving one or more government grants. South African

staff, as shown earlier, also had the greatest livelihood diversification: 77% living in households with two or more income sources. In Botswana, only 12% of staff households interviewed indicated two or more income sources, though it is the author's opinion that this result may be understated and that some Botswana staff may have responded to the question strategically, not mentioning other income sources in order to create an impression of poverty, as many hestitated on the income source and total household income questions.[24] In Malawi, 43% acknowledged two or more household income sources; in Namibia, 61%; in Zambia, 33% and in Zimbabwe 33%.

Table 20: Staff sample: Percentage monthly household income from ecotourism

National group sampled	100% of monthly household income from ecotourism	More than 50% of monthly household income from ecotourism
Botswana	88%	94%
Malawi	59%	97%
Namibia	42%	82%
South Africa	26%	84%
Zambia	67%	100%
Zimbabwe	73%	100%
Average	**59%**	**93%**

Table 20 indicates the heavy dependence on ecotourism of these staff households proximate to the ecotourism operation sites studied. Tourism may be a less uncertain livelihood than agriculture in these areas, but household incomes clearly remain at risk.

The focus of this section has been on the distribution of income. The analysis now shifts to its determinants.

5.7. HOUSEHOLD INCOME DETERMINANTS

Numerous factors were found to impact monthly household incomes in the six study countries. In this section, a regression model is developed with the natural logarithm of monthly household income as the dependent variable and the independent variables listed in Table 22 on page 85. The aim of the regression was to determine which factors correlate with rural household incomes and, specifically, to determine the role played by tourism/conservation in these remote, rural areas. As the distribution of household incomes is skewed (compare means and medians in Table 15), in order to ensure statistical efficiency, the natural logarithm of household income is used in all analyses.

[24] Perhaps in the hope that the results of the study would lead to increases in salaries, or perhaps because they believed that reporting other incomes would lead to job insecurity or lowering of income and benefits.

As discussed in Chapter Four (page 57), PSM was investigated in order to account for any selection bias, and to look at a sample of staff and non-staff respondents matched on age and years educated. The following section presents the PSM results with respect to log income in each country and is followed by the country household income regressions for a more detailed breakdown of factors impacting household incomes.

5.7.1. EFFECT OF TREATMENT ON LOG INCOMES

Kernel matching of staff and non-staff respondents, according to age and number of years formally educated, was used to show the effect of being employed by WS. This was positive in all countries, with the greatest impact in Botswana, Zimbabwe and Zambia (see Appendix G for 'common support' results). Table 21 shows sample sizes after matching, as well as the effect of treatment (being employed by WS).

Table 21: The effect of treatment on log income

National group sampled	Original sample size (n)	Matched sample size (n)	Effect of treatment (per month) (log income)	Effect of treatment (per month) (USD 2011)
Botswana staff	99	98	+1.88	+6.58
Botswana non-staff	261	256		
Malawi staff	74	74	+.834	+2.30
Malawi non-staff	251	233		
Namibia staff	81	79	+.752	+2.12
Namibia non-staff	271	169		
South Africa staff	61	61	+.822	+2.27
South Africa non-staff	329	316		
Zambia staff	15	15	+1.357	+3.88
Zambia non-staff	67	45		
Zimbabwe staff	55	55	+1.584	+4.87
Zimbabwe non-staff	221	214		

The right-hand column in Table 21 shows the expected increase in monthly household income for an average person moving into employment with WS (from 0 to 1 on WSemployed dummy variable), i.e. in Botswana monthly income will, on average, increase by USD6.58 if someone moves from not being employed by WS to being employed by them. As mentioned earlier (page 57) in our context PSM runs the risk of bias. The following section therefore includes a traditional OLS analysis which was felt to reduce bias and provide a more detailed analysis of rural household income determinants.

5.7.2. COUNTRY INCOME REGRESSIONS

Respondents listed numerous different income sources. For the regression model, these were divided into the following dummy variables for ease of comparison and analysis:

1) *Main Income 1*: Farm-related income (included all sales of crops, livestock, etc.);
2) *Main Income 2*: Tourism-related income (included all those employed by WS, as well as those receiving income from the sale of crafts to tourists, etc.);
3) *Main Income 3*: Environment-related income (included the collection of reeds and any other income source that was derived directly from the environment[25]);
4) *Main Income 4*: Formal employment (primary household income source is formal employment, other than tourism employment);
5) *Main Income 5*: Casual labour/piecework (included all non-formal employment);
6) *Main Income 6*: Government grant/pension;

The income regressions were run with the 'base' dummy income variable of Main Income 1: 'farm-related' income, to assess the impact of other income sources on the most traditional form of rural income. Table 22 details the regression variables.

Table 22: List of income regression independent variables

Variable Name	Description
WSemployed	Whether or not the respondent was employed by WS (dummy variable where 1 = yes (staff); 0 = no (non-staff))
Age	Age of the respondent (in years)
Male	Dummy variable for the gender of the respondent (where 1 = male)
No. of children	Number of children of the respondent
No. of dependents	Number of dependents of the respondent
No. of people in the household	Number of people living in the household
No. under 20 years	Number of people in the household under 20 years of age
Male household head	Dummy variable for gender of the household head (where 1 = male)
Age of the household head	Age of the household head (in years)
No. of years educated	Number of years of formal education of the respondent
No. of income sources	Number of income sources in the household
Familyemployednumeric (FE)	Did the respondent have any family employed in tourism/conservation? (dummy variable where 1 = yes)
Employedcodednumeric (Empl)	Was the respondent currently in formal non-tourism employment? (dummy variable where 1 = yes)
Income source (IS) dummy variables	
Main Income 1	Household's main income source is from farm-related activities*
Main Income 2	Household's main income source is from tourism-related activities*
Main Income 3	Household's main income source is from environment-related activities*
Main Income 4	Household's main income source is from formal employment*
Main Income 5	Household's main income source is from piecework/casual labour*
Main Income 6	Household's main income source is government-related, e.g. pensions/grants*

*see further explanation above

[25] Many households use natural resources in various ways and would not have mentioned this in the income section, but it is important in terms of real income. This figure includes only where respondents specifically mentioned selling reeds, collecting and selling fruits, etc.

The regression model used in the household income analysis takes the form:

$$lnY_{ij} = \alpha + \beta \boldsymbol{X_i} + \varepsilon_i$$

Where *i* represents an individual household, j is the country, ln Y_i is the natural logarithm of income for each household, $\boldsymbol{X_i}$ is the vector of independent variables affecting income (Table 22) and ε_i is the error term. The selection of variables was based on the literature and the author's own *a priori* views based on personal observation.

The regression results are presented in Table 23.[26] Where a particular income source did not occur, it is excluded from the regression. The 'employednumeric' variable only captures non-staff respondents who were formally employed outside of the local lodge. Despite its small size it was felt important to include the Zambian analysis as the sample was representative in the area where the study was done. Caution should however be exercised when drawing inferences from the Zambian results.

The regressions illustrate the importance of employment in ecotourism (WS) to overall household incomes in areas proximate to tourism camps. The importance of other income sources, including any other forms of formal employment and incomes based on natural resources (e.g. environment-, farm- and tourism-related income sources), are also highlighted.

[26] The staff and non-staff data are grouped for each country regression; to determine the impact of ecotourism employment. Possible collinearity between number in the household and number of income sources would reduce explanatory power, but would not cause bias.

Table 23: Income regression results by location

Variable	Botswana (n=304)	Malawi (n=292)	Namibia (n=287)	South Africa (n=345)	Zambia (n=78)	Zimbabwe (n=249)	Full sample (n=1479)	Non-staff sample (n=1217)
Intercept	.446 (.474)	1.41*** (3.80)	4.14*** (.277)	3.61*** (.371)	1.66** (.810)	-.071 (.479)	3.22*** (.191)	3.20*** (.212)
Country 1: Botswana	N/A	N/A	N/A	N/A	N/A	N/A	-1.06*** (.101)	-1.31*** (.121)
Country 2: Malawi	N/A	N/A	N/A	N/A	N/A	N/A	-1.47*** (.120)	-1.59*** (.133)
Country 3: Namibia	N/A	N/A	N/A	N/A	N/A	N/A	-.097 (.103)	-.075 (.123)
Country 5: Zambia	N/A	N/A	N/A	N/A	N/A	N/A	-1.27*** (.105)	-1.37*** (1.78)
Country 6: Zimbabwe	N/A	N/A	N/A	N/A	N/A	N/A	-1.39*** (.105)	-1.60*** (.126)
Environmental Income	.855* (.468)	1.19*** (.319)	NI	-1.58** (.552)	-1.98* (1.10)	1.10** (.495)	.615** (.214)	.661** (.226)
Formal Employment Income	.535** (.236)	.819*** (.186)	.120 (.209)	-.175 (.275)	.308 (.386)	1.18*** (.223)	.570*** (.089)	.559*** (.096)
Piecework/Casual Labour	.657** (.261)	-.011 (.314)	.125 (.347)	-.404 (.305)	.013 (.426)	.175 (.219)	.090 (.113)	.131 (.120)
Government Grants	1.20** (.345)	NI	-.077 (.254)	-.110 (.269)	NI	.449 (.438)	.810*** (.115)	.683*** (.127)
Tourism-related Income	.930** (.394)	1.17 (.820)	-.454* (.234)	-.607* (.348)	NI	.116 (.292)	.228 (.152)	.165 (.190)
WS employed	1.89*** (.386)	-.196 (.819)	1.40*** (.261)	1.21*** (.261)	1.22** (.510)	2.11*** (.328)	1.60*** (.155)	NI
Age	.004 (.010)	.002 (.012)	-.005 (.006)	.001 (.004)	-.051 (.078)	-.002 (.007)	-.003 (.003)	-.004 (.015)
Male	.262 (.173)	.146 (.179)	.147 (.141)	.078 (.088)	.262 (.589)	.263 (.193)	.246*** (.068)	.241** (.080)
No. of Children	.060 (.045)	-.015 (.033)	.014 (.024)	.006 (.022)	-.124 (.080)	-.017 (.036)	-.008 (.014)	-.003 (.015)
No. of Dependents	.022 (.019)	.104*** (.024)	.008 (.009)	.018 (.016)	.059 (.057)	.005 (.027)	.029*** (.007)	.024** (.007)
No. in the household	.012 (.028)	-.014 (.064)	.014 (.011)	.018 (.020)	.191 (.164)	.004 (.031)	.008 (.009)	.009 (.009)
No. in household under 20 years old	.009 (.035)	-.069 (.070)	-.014 (.019)	-.026 (.030)	-.141 (.166)	-.024 (.030)	-.027** (.013)	-.027* (.014)
Male household head	-.001 (.170)	.395** (.196)	-.003 (.145)	.175** (.085)	.191 (.544)	.418** (.179)	.247*** (.069)	.275** (.080)
Age of the household head	-.005 (.005)	-.008 (.011)	.002 (.005)	.007** (.003)	.057 (.077)	.008 (.006)	-.002 (.002)	-.0004 (.003)
No. of years educated	.058** (.026)	.064** (.021)	-.024 (.020)	.021 (.013)	.055 (.055)	.120*** (.027)	.010 (.009)	.009 (.010)
Currently formally employed	1.40*** (.122)	.252 (.332)	.622** (.196)	.836*** (.150)	1.40** (.685)	.615 (.441)	.869*** (.112)	.830*** (.119)
No. of income sources	1.05*** (.122)	.523*** (.111)	.445*** (.085)	.381*** (.047)	.264 (.178)	.664*** (.080)	.565*** (.038)	.619*** (.044)
Family employed in tourism/conservation	.193 (.143)	NI	-.294** (.134)	.127 (.078)	-.200 (.302)	.338** (.140)	.003 (.060)	.002 (.071)
Adjusted R^2	0.5497	0.4180	0.2133	0.4339	0.4867	0.6046	0.5551	0.5107
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

NOTES: The figures in parentheses are standard errors. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.

Not included (NI): There were no government grants in Malawi and family employed was not included in the staff interview schedules: these variables were therefore excluded from the regression.

In Namibia, no environmental income was reported.

In Zambia, there were no government grants and tourism-related income correlated with WS Employed, and was therefore excluded from the regression.

Table 23 shows that the type or source of household income is important. Tourism was an important driver of higher household incomes not only through employment with WS but also in other ways, e.g. selling crafts, etc., particularly in Botswana, Namibia and South Africa. As the main household income source, formal employment of any kind was significant in Botswana, Malawi and Zimbabwe. In all countries, except Malawi and Zimbabwe, the non-staff respondent being formally employed was shown to be significant, and in all instances positively affected household incomes.

Table 24 shows that when other variables are included in the analysis of monthly household incomes, employment with WS became most important in Zimbabwe, followed by Botswana. Moving from not being employed by WS (0) to being employed by WS (1) in Zimbabwe would lead to, on average, an increase in monthly household income of USD8.25, all other factors held constant.

Table 24: Impact of employment with WS on monthly household incomes[27]

National group sampled	US Dollar (2011) income effect of employment with WS
Botswana	6.62
Malawi	0.82
Namibia	4.06
South Africa	3.39
Zambia	3.39
Zimbabwe	8.25
Full sample	4.95

In a comparison of the OLS and PSM results (Tables 21 and 24), the PSM effect of treatment was lower in all countries,[28] except Malawi. When other variables (see Table 23) were included in analysing household incomes in Malawi, the impact of employment with WS declined. In all other countries, the impact on household incomes of being employed by WS increased and was significant. This is possibly due to salaries being lowest in Malawi and therefore less significant, as a determinant of overall household incomes, when other factors are considered. The number of income sources was significant and positive in all countries, except Zambia, i.e., monthly household incomes tend to increase as the number of household income sources rises.

The number of years of formal education was significantly associated with higher levels of income in Botswana, Malawi and Zimbabwe. In Namibia, the Himba people were largely

[27] These figures were calculated using the regression coefficients for WS employed in Table 23 and converting log incomes to US Dollar incomes.
[28] This difference is due to the additional variables added in the OLS and was confirmed by a restricted OLS, run using only age and years educated, which gave results similar to the PSM.

uneducated, but had high household incomes as a result of having large numbers of cattle. In Zambia and South Africa, education showed a positive sign but was not significant. In South Africa, many respondents received government grants, irrespective of education levels, which could explain the lack of significance. It is unclear why education was not significant in Zambia, but could be as a result of the small sample size.

There was no consistent relationship between income and the various demographic variables tested. It is surprising that having a family member employed in tourism/conservation was only significant in Namibia and Zimbabwe and that the relationship was in fact negative in Namibia (again this could be related to the high household incomes of the Himba people). Although a number of studies (Niehof, 2004; Richardson et al., 2012; Vedeld et al., 2012) have found gender of the household head to be important as a determinant of household incomes, in this study it was only significant in Malawi, South Africa and Zimbabwe. In these cases male-headed households tended to enjoy higher household incomes.

Regressions were also run for the whole sample and for the non-staff sample only (results in Table 23). These regressions included a country dummy variable, with South Africa used as the base dummy. Gender became significant in the aggregated analyses, with male respondents and households with male heads tending to have higher monthly household incomes. Income source was again an important determinant of household incomes. Formal employment and livelihood diversification also appeared significant in the aggregated samples.

Table 25 presents the regression results for monthly household expenses (to be discussed in detail in the next section) for purposes of comparison with the factors impacting household incomes. It was assumed that would be some degree of similarity between the factors impacting incomes and expenditures, based on the analyses in Table 29 on page 97. The number of dependents was significant in all countries, except Botswana and Zambia, with a positive relationship to household expenses, i.e. as number of dependents increased, household expenses tended to increase. Those with higher education levels, more income sources, family employed in tourism/conservation and employed by WS (except in Malawi) tended to have higher monthly household expenses. These results accord with the household income regression results in Table 23, suggesting that respondent's stated incomes were largely honest and accurate.

Table 25: Expense regression results by location

Variable	Botswana (n=311)	Malawi (n=294)	Namibia (n=294)	South Africa (n=351)	Zambia (n=80)	Zimbabwe (n=259)	Full sample (n=1513)	Non-staff sample (n=1248)
Intercept	.328 (.542)	2.25*** (.325)	4.93*** (.240)	4.07*** (.414)	2.25*** (.325)	2.93*** (.466)	3.85*** (.190)	3.28*** (.210)
Country 1: Botswana	N/A	N/A	N/A	N/A	N/A	N/A	-1.06*** (.101)	-1.41*** (.120)
Country 2: Malawi	N/A	N/A	N/A	N/A	N/A	N/A	-1.40*** (.120)	-1.48*** (.132)
Country 3: Namibia	N/A	N/A	N/A	N/A	N/A	N/A	.187* (.102)	.208* (.122)
Country 5: Zambia	N/A	N/A	N/A	N/A	N/A	N/A	-.905*** (.150)	-.918*** (.175)
Country 6: Zimbabwe	N/A	N/A	N/A	N/A	N/A	N/A	-.548*** (.105)	-.648** (.124)
Environmental Income	.732 (.538)	.218 (.275)	NI	-1.45** (.657)	.192 (.935)	.197 (.488)	.057 (.216)	.113 (.226)
Formal Employment Income	.675** (.269)	-.037 (.160)	-.228 (.177)	-.354 (.283)	.316 (.315)	.076 (.215)	.112 (.088)	.106 (.094)
Piecework/Casual Labour	.576* (.298)	-.501* (.271)	-.093 (.303)	-.786** (.329)	-.185 (.353)	.109 (.210)	-.127 (.113)	-.078 (.119)
Government Grants	.632 (.397)	NI	-.377 (.213)	-.506* (.280)	NI	-.295 (.430)	.226* (.115)	.141 (.125)
Tourism-related Income	.791* (.453)	1.26* (.709)	-.134 (.205)	-.820** (.396)	NI	.062 (.288)	.242 (.152)	.222 (.190)
WS employed	1.93*** (.442)	-.645 (.709)	.587** (.229)	1.01** (.321)	.301 (.428)	.886** (.323)	.945*** (.156)	NI
Age	.012 (.011)	-.005 (.010)	-.003 (.006)	-.002 (.005)	-.011 (.048)	-.006 (.007)	-.003 (.003)	-.006* (.003)
Male	.047 (.195)	-.164 (.154)	.261** (.124)	.067 (.107)	-.046 (.451)	-.045 (.187)	.096 (.068)	.101 (.079)
No. of Children	.001 (.052)	.019 (.029)	.026 (.021)	.050* (.028)	-.129* (.065)	-.004 (.033)	.014 (.014)	.017 (.015)
No. of Dependents	.019 (.021)	.070** (.021)	.019** (.007)	.034* (.019)	.054 (.045)	.062** (.024)	.037*** (.007)	.034*** (.007)
No. in the household	-.027 (.031)	.080 (.055)	.001 (.010)	.009 (.025)	.316** (.134)	.024 (.027)	-.0001 (.0080	.0009 (.009)
No. in household under 20 years old	.061 (.040)	-.110* (.061)	.011 (.016)	.009 (.036)	-.257* (.139)	-.032 (.029)	-.006 (.013)	-.002 (.014)
Male household head	.362* (.191)	.468** (.169)	-.097 (.126)	.236** (.104)	.450 (.407)	.300* (.175)	.308*** (.069)	.348*** (.079)
Age of the household head	-.004 (.006)	-.001 (.009)	-.0008 (.004)	.007* (.004)	.001 (.047)	-.001 (.006)	-.004 (.002)	-.0007 (.003)
No. of years educated	.112*** (.030)	.060** (.018)	.009 (.017)	.027* (.016)	.040 (.046)	.073** (.027)	.035*** (.009)	.034** (.010)
Currently formally employed	.846** (.283)	.520 (.287)	.459** (.171)	.312* (.179)	.655 (.567)	.316 (.397)	.539*** (.111)	.522*** (.117)
No. of income sources	.863*** (.139)	.257** (.094)	.158** (.073)	.177** (.057)	.275* (.147)	.249** (.077)	.322*** (.038)	.353*** (.043)
Family employed in tourism/conservation	.154 (.163)	NI	-.204* (.117)	.061 (.096)	-.181 (.252)	.467** (.135)	.071 (.060)	.119* (.070)
Adjusted R^2	0.4741	0.3470	0.1333	0.2484	0.4784	0.3261	0.4317	0.3924
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

NOTES: The figures in parentheses are standard errors. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively.

Not included (NI): There were no government grants in Malawi and family employed was not included in the staff interview schedules: these variables were therefore not included in the regression.

In Namibia, no environmental income was reported.

In Zambia, there were no government grants and tourism-related income correlated with WS Employed, and was therefore excluded from the regression.

The following section analyses stated household expenditures, investigating where the ecotourism dollar goes and how rural households spend their incomes.

5.8. RURAL HOUSEHOLD EXPENDITURES

One of the key arguments in support of ecotourism is that it injects cash into rural areas, which can then help kickstart other enterprises, via a local multiplier effect. In order to evaluate the relevance of this argument this study analysed the spending patterns of staff and non-staff respondents. Analysis did not extend beyond the respondents' first round of spending.

Table 26 provides a detailed breakdown of monthly household expenditures in each country. In all cases in Table 26, mean expenditures were higher than the median, suggesting the means were raised by a few high expenditure households among those interviewed.

Table 26: Stated monthly household expenses for staff and non-staff respondents by location

National group sampled	Staff stated monthly household expenses (USD 2011)	Non-staff stated monthly household expenses (USD 2011)	Average stated monthly household expenses (USD 2011)
Botswana	(n=99)	(n=261)	(n=360)
Mean	319.72	112.46	169.46
Median	230.70	46.31	77.99
Mode	178.64	0	0
Minimum	64.48	0	0
Maximum	2706.07	3308.69	3308.69
Malawi	*(n=74)*	*(n=251)*	*(n=325)*
Mean	113.87	50.57	64.98
Median	75.08	35.97	45.03
Mode	*	0	0
Minimum	19.08	0	0
Maximum	957.87	751.12	957.87
Namibia	*(n=81)*	*(n=271)*	*(n=352)*
Mean	317.41	258.35	271.94
Median	255.47	196.93	207.19
Mode	*	0	0
Minimum	89.66	0	0
Maximum	2492.45	2535.73	2535.73
South Africa	*(n=61)*	*(n=329)*	*(n=390)*
Mean	400.37	209.09	239.01
Median	319.95	156.43	175.20
Mode	*	0	0
Minimum	107.0	0	0
Maximum	2163.37	1933.19	2163.37
Zambia	*(n=15)*	*(n=67)*	*(n=81)*
Mean	151.51	99.70	109.81
Median	135.69	56.54	74.64
Mode	*	0	0
Minimum	65.66	0	0
Maximum	395.61	575.44	575.44
Zimbabwe	*(n=55)*	*(n=221)*	*(n=276)*
Mean	367.44	135.53	181.74
Median	219.23	91.09	120.52
Mode	*	*	*
Minimum	90.05	0	0
Maximum	2182.94	1206.54	2182.94

*Multiple modes

Table 27 shows monthly household expenditures for staff and non-staff respondents in each country; illustrating a statistical difference between staff and non-staff respondent expenditures in all countries. Mean monthly household expenditures and PPP figures are graphed in Figure 9.

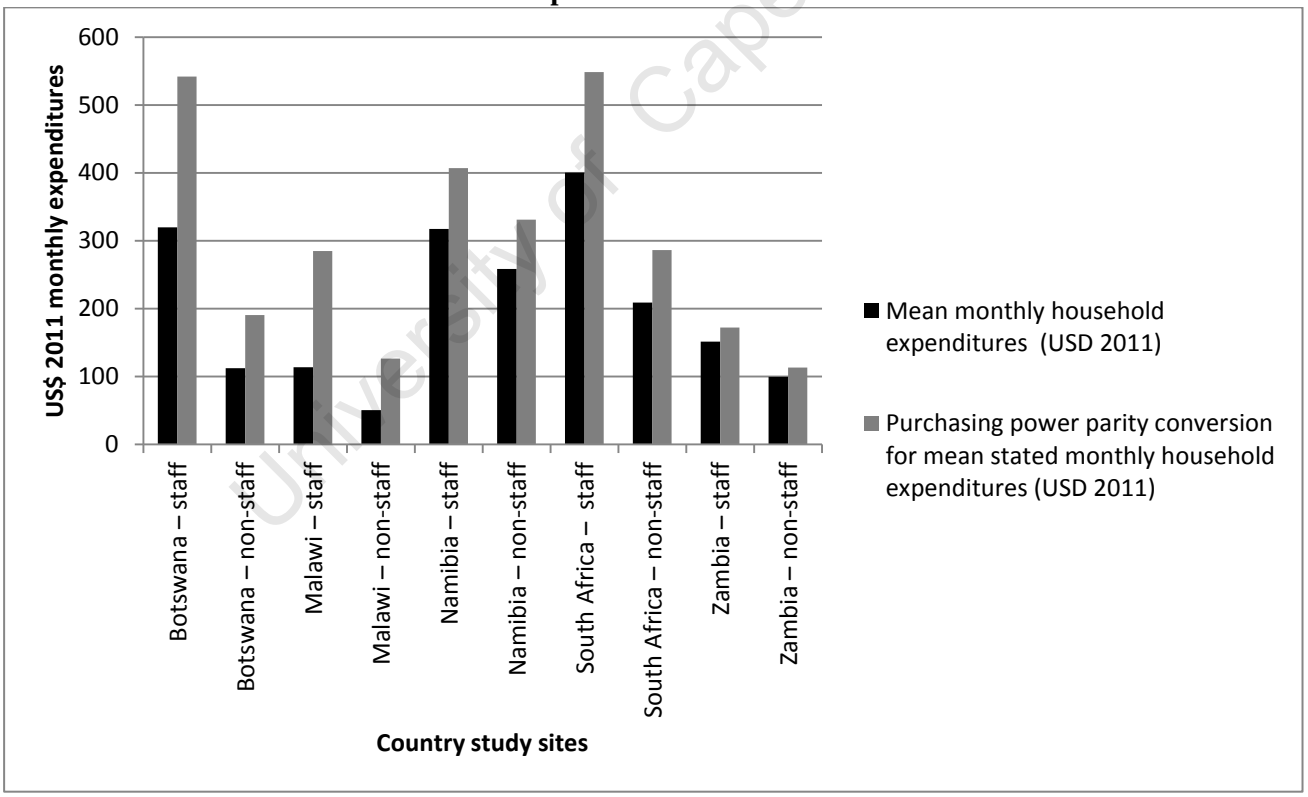
Table 27: Monthly household expenditures by location

National group sampled	Sample size (n)	Mean monthly household expenditures (USD 2011)	Log monthly expenditures	Statistical significance	Purchasing power parity conversion* for mean stated monthly household expenditures (USD 2011)
Botswana – staff	99	319.72	M = 5.60, SE = .06	U = 2697.50, Z = -11.603, p < .001	547.86
Botswana – non-staff	261	112.46	M = 3.36, SE = .12		190.61
Malawi – staff	74	113.87	M = 4.41, SE = .08	U = 4016.0, Z = -7.42, p , .001	284.68
Malawi – non-staff	251	50.57	M = 3.33, SE = .08		126.43
Namibia – staff	81	317.41	M = 5.12, SE = .06	U = 8126.5, Z = -3.545, p < .001	406.94
Namibia – non-staff	271	258.35	M = 5.12, SE = .06		331.22
South Africa – staff	61	400.37	M = 5.85, SE = .06	U = 3165.0, Z = -8.495, p < .001	548.45
South Africa – non-staff	329	209.09	M = 4.96, SE = .06		286.42
Zambia – staff	15	151.51	M = 4.91, SE = .12	U = 251.0, Z = -3.017, p < .05	172.17
Zambia – non-staff	67	99.70	M = 3.93, SE = .17		113.29
Zimbabwe – staff	55	367.44	M = 5.60, SE = .09	U = 1946.0, Z = -7.80, p < .001	Not available**
Zimbabwe – non-staff	221	135.53	M = 4.38, SE = .08		Not available**

*PPP conversion factors were obtained from www.tradingeconomics.com; these figures were taken from a 2012 World Bank report.

**PPP conversion factors were not available for Zimbabwe.

Figure 9: Comparison of stated monthly household expenditures and PPP-converted expenditures



All respondents' individual expenditures were summed and monthly household expenditures for staff and non-staff respondents were analysed to illustrate the trends in expenditure for each. The total expenditure categories in Table 28 and Figure 10 give the percentage of

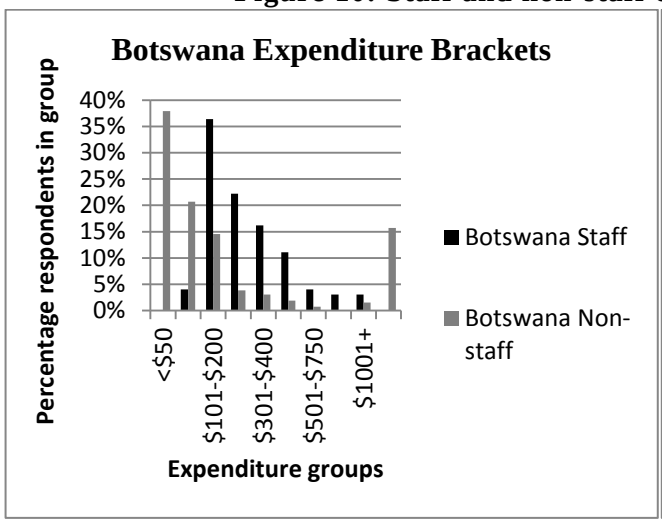
respondents in each expenditure bracket,[29] e.g. 40% of Botswana non-staff respondents spent less than USD50 per month and more than 60% of Malawi non-staff respondents spent less than USD50 per month. Unsurprisingly, the graphs show that staff typically spent more per month than non-staff respondents.

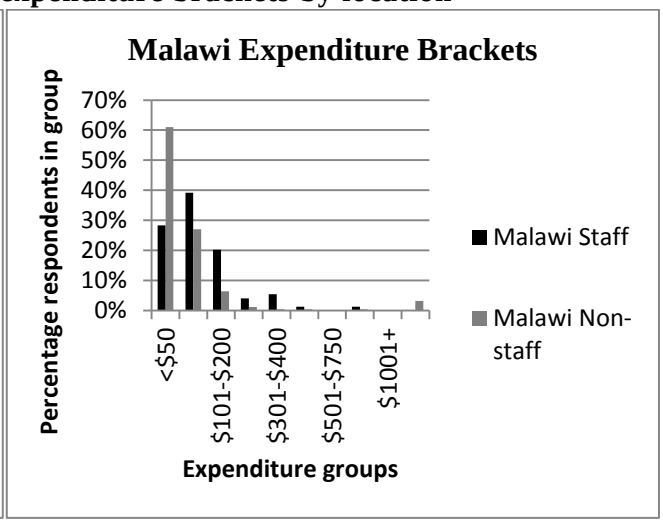
Table 28: Percentage expenditure brackets for staff and non-staff respondents in each country (USD 2011)

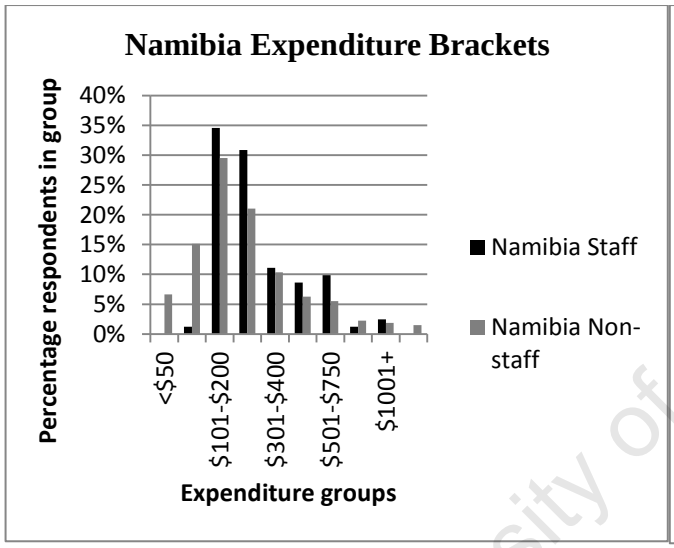
National group sampled	Missing	<$50	$51-$100	$101-$200	$201-$300	$301-$400	$401-$500	$501-$750	$751-$1000	$1001+	Total
Botswana Staff	0%	0%	4%	36%	22%	16%	11%	4%	3%	3%	100%
Botswana Non-staff	16%	38%	21%	15%	4%	3%	2%	1%	0%	2%	100%
Malawi Staff	0%	28%	39%	20%	4%	5%	1%	0%	1%	0%	100%
Malawi Non-staff	3%	61%	27%	6%	1%	0%	0%	0%	0%	0%	100%
Namibia Staff	0%	0%	1%	35%	31%	11%	9%	10%	1%	2%	100%
Namibia Non-staff	1%	7%	15%	30%	21%	10%	6%	6%	2%	2%	100%
South Africa Staff	0%	0%	0%	10%	38%	21%	7%	21%	2%	2%	100%
South Africa Non-staff	2%	5%	15%	47%	15%	7%	4%	2%	1%	2%	100%
Zambia Staff	0%	0%	27%	53%	13%	7%	0%	0%	0%	0%	100%
Zambia Non-staff	3%	37%	25%	24%	4%	1%	1%	3%	0%	0%	100%
Zimbabwe Staff	0%	0%	2%	36%	31%	5%	7%	9%	2%	7%	100%
Zimbabwe Non-staff	1%	26%	26%	29%	9%	4%	2%	0%	0%	1%	100%

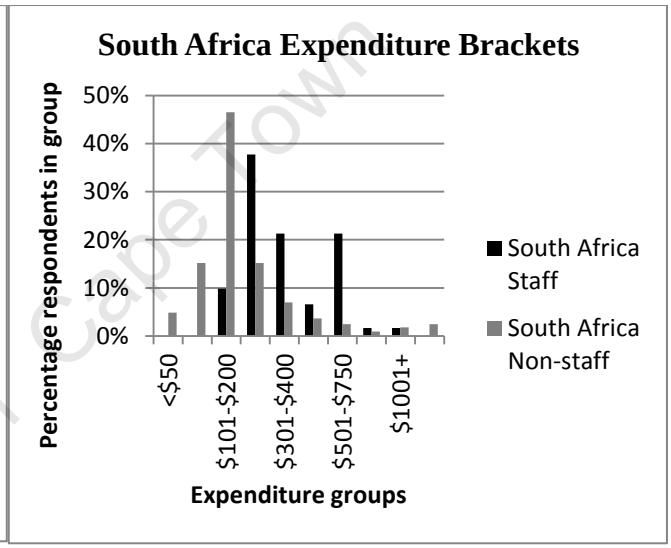
[29] The expenditure categories were chosen by the author based on an analysis of these figures and the desired appropriateness of the categories to an overall understanding of rural household expenditures.

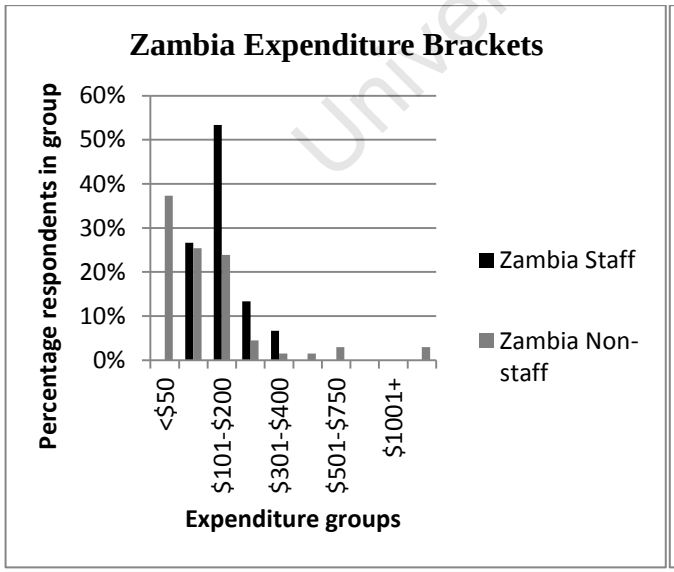
Figure 10: Staff and non-staff expenditure brackets by location

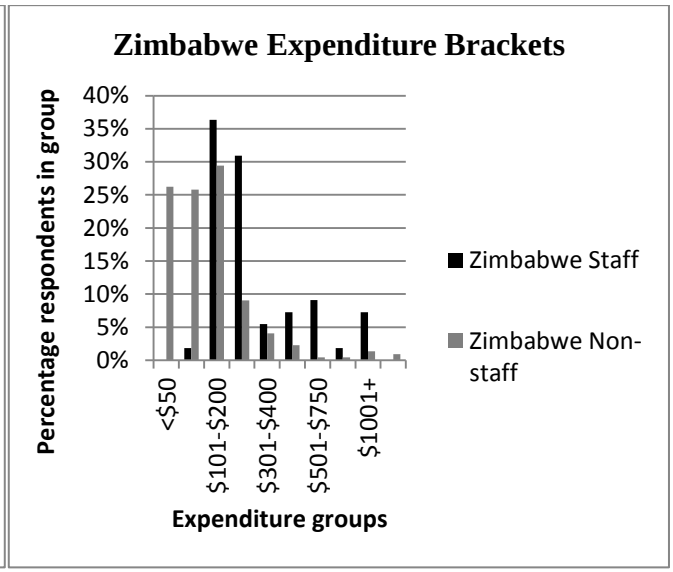












Only among South African staff and non-staff respondents, Namibian staff and Zambian staff respondents (see Table 29) did stated household incomes exceed stated household expenditures.

Table 29: Monthly household income and expenditure comparisons by location

National group sampled	Mean stated monthly household income (USD 2011)	Mean stated monthly household expenditures (USD 2011)	Difference between stated average monthly income and expenditures (USD 2011)
Botswana – staff	290.94 (n=95)	319.72 (n=99)	-28.78
Botswana – non-staff	92.92 (n=251)	112.46 (n=261)	-19.54
Malawi – staff	102.93 (n=74)	113.87 (n=74)	-10.94
Malawi – non-staff	47.13 (n=246)	50.57 (n=251)	-3.44
Namibia – staff	363.85 (n=80)	317.41 (n=81)	46.44
Namibia – non-staff	221.54 (n=257)	258.35 (n=271)	-36.81
South Africa – staff	544.37 (n=61)	400.37 (n=61)	144
South Africa – non-staff	274.76 (n=313)	209.09 (n=329)	65.67
Zambia – staff	218.06 (n=15)	151.51 (n=15)	66.55
Zambia – non-staff	89.84 (n=63)	99.70 (n=66)	-9.86
Zimbabwe – staff	308.83 (n=55)	367.44 (n=55)	-58.61
Zimbabwe – non-staff	63.88 (n=206)	135.53 (n=221)	-71.65

While conducting interviews the author found that most non-salaried respondents were more aware of their monthly expenditures than they were of their exact monthly incomes. This may be explained by respondents' unwillingness to divulge all their income and its sources, while being comfortable revealing all their expenses. While it is unclear from the interview schedules whether or not respondents were spending too much, or were misrepresenting their earnings, it seems likely that the stated monthly expenditures better reflect household 'income' than does the respondent's stated monthly household income. Figures 11 and 12 compare the mean monthly household income and expenditure amounts from Table 29 for staff and non-staff respondents in each country.

Figure 11: Staff sample: Mean monthly household income and expenditure comparison by location

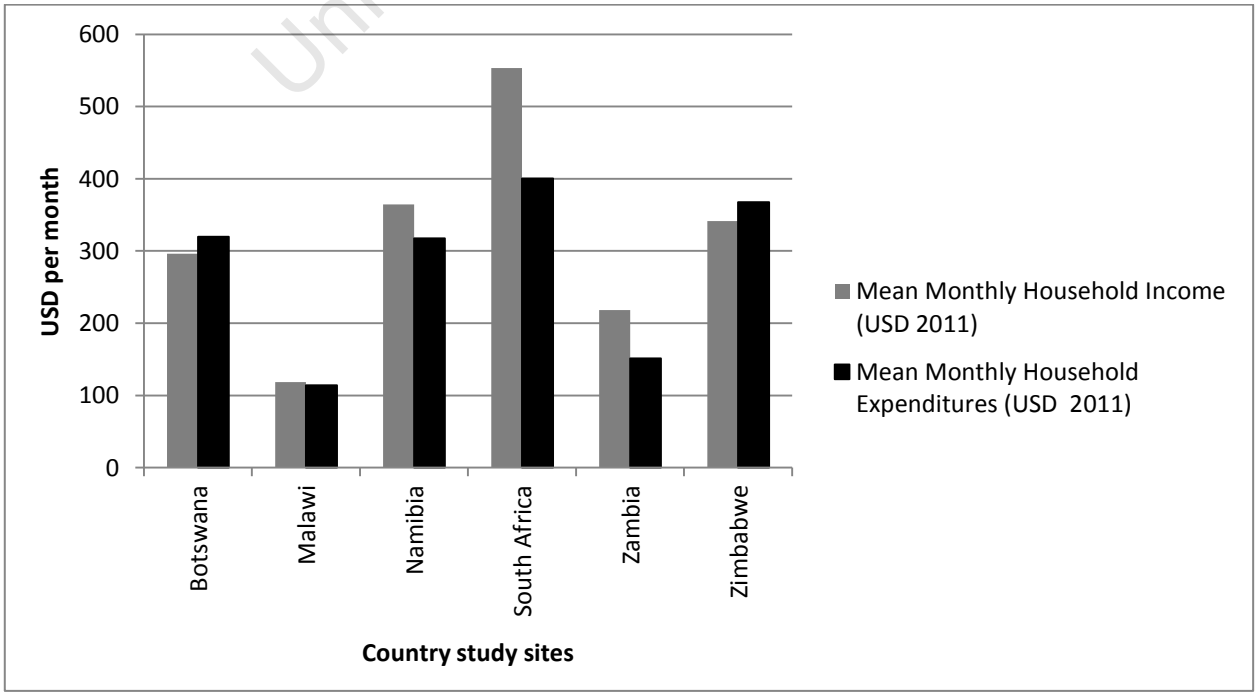
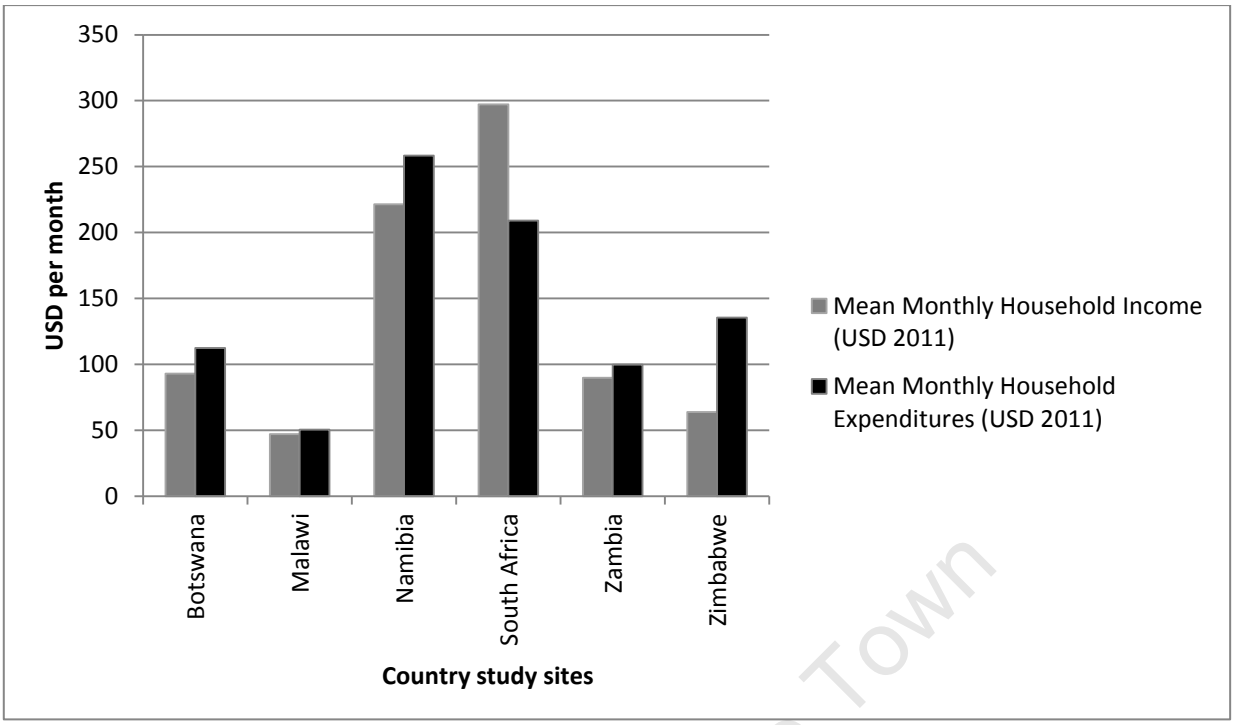


Figure 12: Non-staff sample: Mean monthly household income and expenditure comparison by location



*The large difference in Zimbabwe may be due to strategic answering by respondents, who were understating income in the hope that the interviewer would assist them; explained on page 50.

In order to assess local linkages Table 30 presents the mean monthly household expenditures of staff respondents only and projected expenditures calculated for the entire workforces of the surveyed camps.

Table 30: Staff sample: Total monthly cash injection from ecotourism into the local economy

National group sampled	Mean monthly household expenditures – staff only (USD 2011)	Total no. of staff in surveyed camp	Projected total monthly injection into the local economy (USD 2011)*	Projected mean cash injection into local economy per ecotourism bed per month (USD 2011)
Botswana (3 camps surveyed – 52 beds)	319.72	173	55 311.56	1063.68
Malawi (2 camps surveyed – 50 beds)	113.87	108	12 297.96	245.96
Namibia (4 camps surveyed – 104 beds)	317.41	166	59 690.06	573.94
South Africa (2 camps – 64 beds)	400.37	94	37 634.78	588.04
Zambia (1 camp – 18 beds)	151.51	23	3 484.73	193.59
Zimbabwe (4 camps – 64 beds)	367.44	119	43 725.36	683.21
Average (16 ecotourism camps – 352 beds)	**278.39**	**683**	**212 144.45**	**602.68**

*Calculated by multiplying staff respondents' mean stated monthly household expenditures by the number of staff at the surveyed camp.

Since there are few commercial shops in the villages close to the camps some household expenditures are made directly to other households in the local economy surrounding the camps. On the other hand, some will be spent on transport and on goods brought in from larger centres. In each country, the flow

of ecotourism income into the local economy is an injection of cash that can then be circulated to stimulate further spending (see the case studies in Text Boxes 4 and 5). The implication is that ecotourism has a local knock-on effect because much of the budget is spent on wages and much of these are spent locally.

Text Boxes 4 and 5 briefly describe the benefits received by two ecotourism employees and the associated local knock-on effects. They also illustrate the role of ecotourism employment in reducing poverty by increasing real household incomes and opportunities, through staff's ability to invest in assets and educating their children.

Text Box 4: Case Study: Local employment and expenditures in Namibia

A 37 year old female employee in Namibia from a village within the Torra Conservancy started working as a housekeeper and then moved to waitress, barlady, supervisor, assistant manager and is now camp manager. Over and above her monthly wage she receives food, accommodation, transport, pension, uniform and medical aid and has received training from WS in service, housekeeping, computers, driving, HIV and management. She supports six people and her children attend the local school. Consumer durables in the household include a television, fridge and mobile phone. She estimated that 30% of her monthly expenditure is directed to the local shops and spent on airtime, food and cleaning materials.

Calculations in Table 30, based on the mean monthly household expenditures reported by staff and the total number of staff employed in the surveyed camps, suggest that staff inject USD212 144 monthly into local economies surrounding the camps across the six countries. Some of this accrued from other sources, but the bulk was from ecotourism (Table 20, page 83). This yields approximately USD13 259 per month per ecotourism camp or USD603 per ecotourism bed per month.

Text Box 5: Case Study: Local employment and expenditures in Malawi

A 35-year old male employee in Malawi started working as a trainee waiter, moving on to barman and is now a safari guide. He received training in food and beverage and safari guiding from WS. Over and above his monthly wage, he receives food, pension and medication. He comes from one of the villages adjacent to the Park and supports approximately 15 people. Consumer durables in the household include a television, fridge, two mobile phones and a portable radio. The majority of his expenditures were in the local economy and were on school fees, maize, cassava, and other food goods.

5.8.1. SPENDING PATTERNS: WHERE DOES THE ECOTOURISM DOLLAR GO?

To understand the impact of ecotourism on rural communities, it is important to understand ecotourism staff spending patterns: where does the ecotourism dollar go?

Table 31 details the reported expenditures of staff and non-staff respondents on major items, including the US dollar equivalent and the percentage of total expenses. This table is aggregated for all respondents. In total, staff were spending 28% of their monthly household income on food, while non-staff respondents were spending nearly 36%. As the majority of staff respondents receive meals when on duty, spending on food is largely for their dependents.

Table 31: Staff and non-staff monthly household expenditures, as a percentage and as a USD amount

Staff (n=385)	% of total expenditures	Total USD amount
Food	28.0%	35716.07
Education	11.3%	14348.65
Money to Dependents	7.2%	9215.10
Telephone	5.6%	7151.76
Accounts	5.6%	7073.94
Toiletries	5.1%	6441.51
Clothes	4.7%	5959.20
Casual Labour/Childcare	4.6%	5872.97
Other	4.6%	5859.24
Rent	3.9%	4960.00
Cleaning Materials	3.6%	4634.70
Electricity	3.0%	3859.74
Medical Expenses	2.6%	3276.90
Transport	2.1%	2638.01
Gas/Paraffin/Candles	1.8%	2290.55
Loans	1.8%	2236.37
Water Expenses	1.6%	2055.09
Alcohol	1.4%	1847.58
Fuel	0.8%	1030.52
Cigarette	0.8%	972.28
Total	**100.0%**	**127440.19**

Non-staff (n=1400)	% of total expenditures	Total USD amount
Food	35.5%	78567.99
Toiletries	6.7%	14841.64
Cleaning Materials	6.2%	13652.04
Transport	5.8%	12736.57
Clothes	5.2%	11474.64
Education	5.0%	11043.21
Loans	4.9%	10946.63
Alcohol	4.2%	9276.13
Other	3.9%	8529.31
Money to Dependents	3.7%	8152.04
CasualLabour	3.0%	6610.80
Gas/Paraffin/Candles	2.9%	6427.07
Telephone	2.8%	6297.46
Accounts	2.8%	6187.59
Electricity	2.2%	4807.02
Cigarettes	1.9%	4262.39
Medical Expenses	1.6%	3440.37
Fuel	1.5%	3252.15
Rent	0.3%	656.54
Water Expenses	0.1%	238.55
Total	**100.0%**	**221400.15**

Overall, staff expenditures were high on the following items: education, money given to dependents, accounts/lay-byes, casual labour, telephone, toiletries and water expenses. Staff's higher expenditure in areas such as education and supporting dependents highlights ecotourism employment's contribution to local social welfare and poverty reduction.

Non-staff expenditures were high on: toiletries, cleaning materials, transport, clothes, education and loans. Overall, they were, in general, spending more than staff respondents on necessities, such as food, toiletries, transport, and gas. A graphical comparison of the percentage of total expenditure per

item in Figure 13 gives a clearer indication of the differences between staff and non-staff spending patterns.

The expenditure on food in this analysis was for 'purchased foods' only, and therefore excludes the value of all subsistence farming and bartered foodstuffs. While conducting interviews it was observed that most households engaged in some home cultivation, particularly maize, pumpkin, millet, groundnuts, watermelon, and sorghum. Some households had larger plots and were able to sell surplus produce. This is reflected in the farm-related income source discussed in the previous sections.

Figures 14 and 15 illustrate the patterns of staff and non-staff monthly expenditures in each country (see the associated tables in Appendix H). Conspicuous in Figure 14 is the high staff expenditure on education in all countries. South Africa and Namibia both have high expenditure on accounts/lay-byes/hire purchases (for household durables, e.g. televisions, fridges, etc.), possibly a result of the number of companies offering lay-byes in rural areas in these two countries.

Figure 13: Staff and non-staff sample comparison: Percentage monthly expenditures on various items

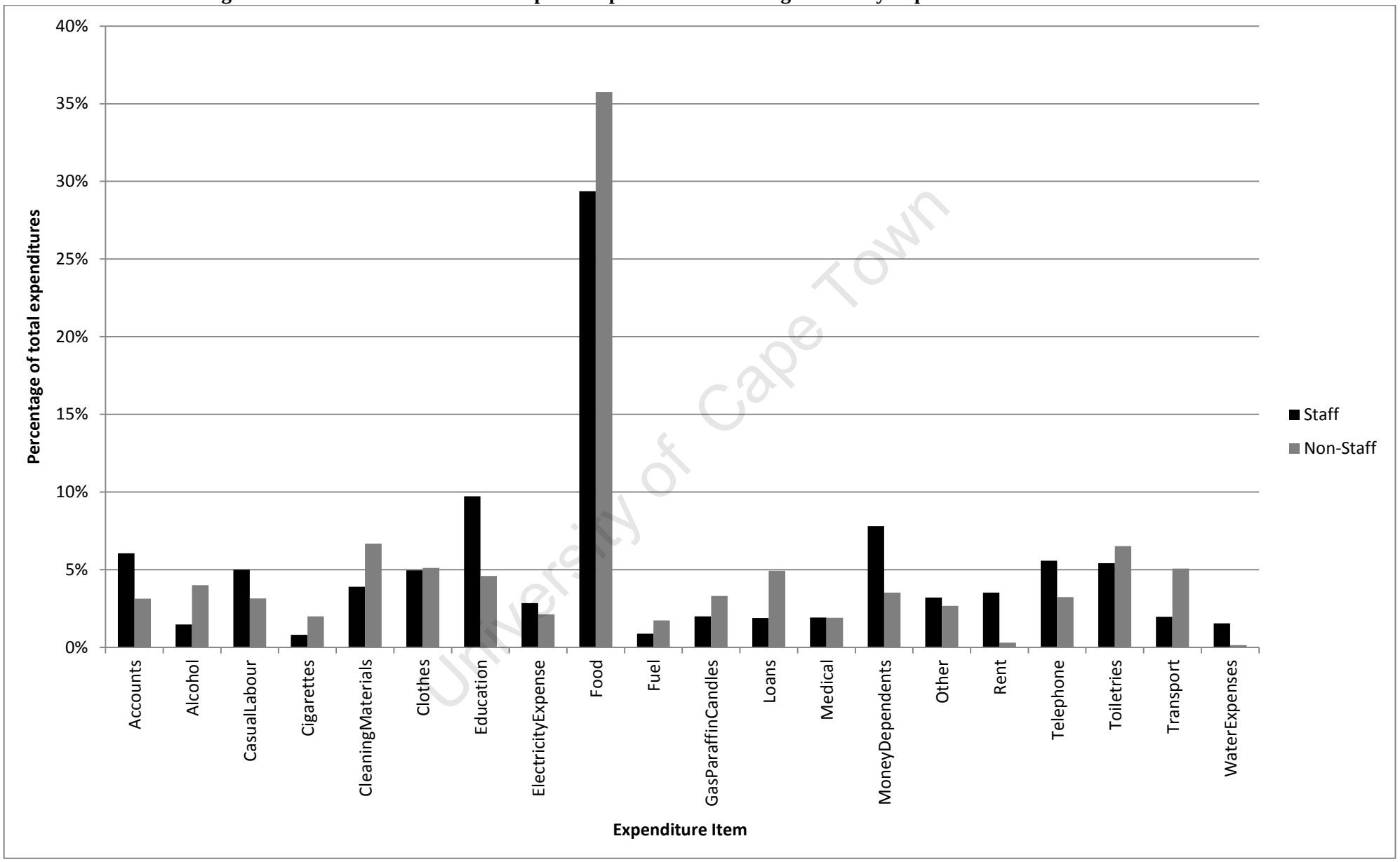


Figure 14: Reported staff expenditures as a percentage of total expenditures in each country

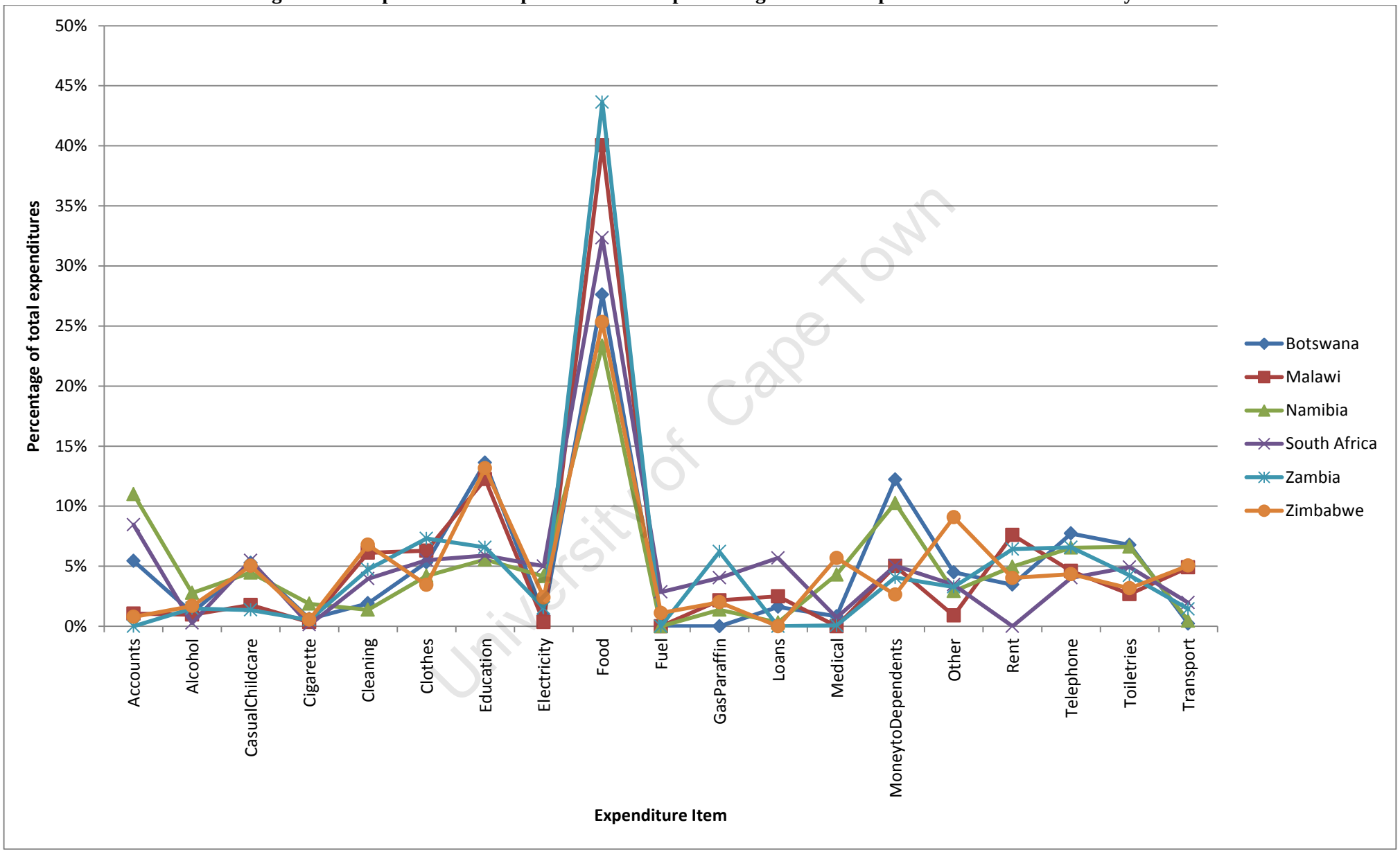


Figure 15: Reported non-staff expenditures as a percentage of total expenditures in each country

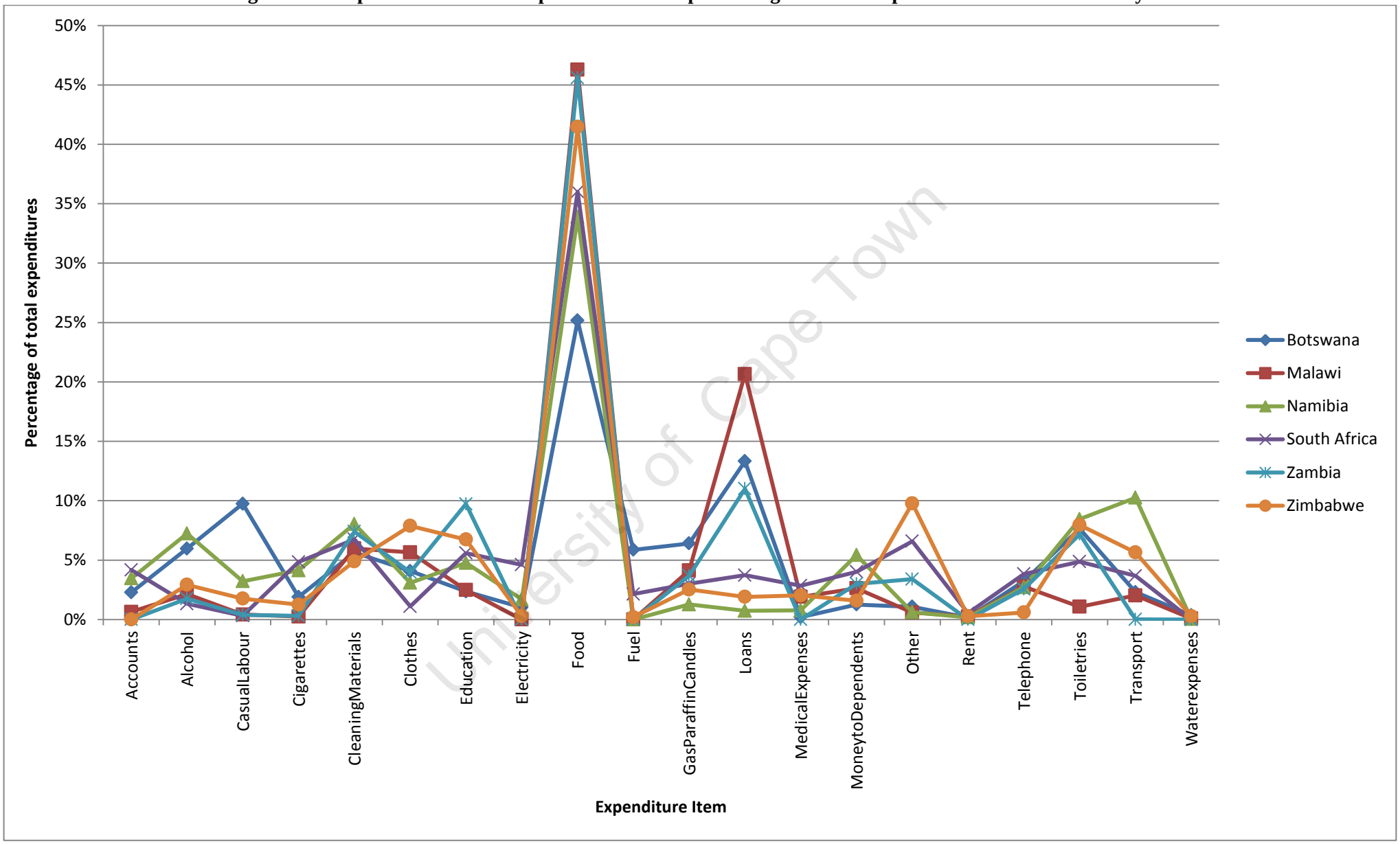
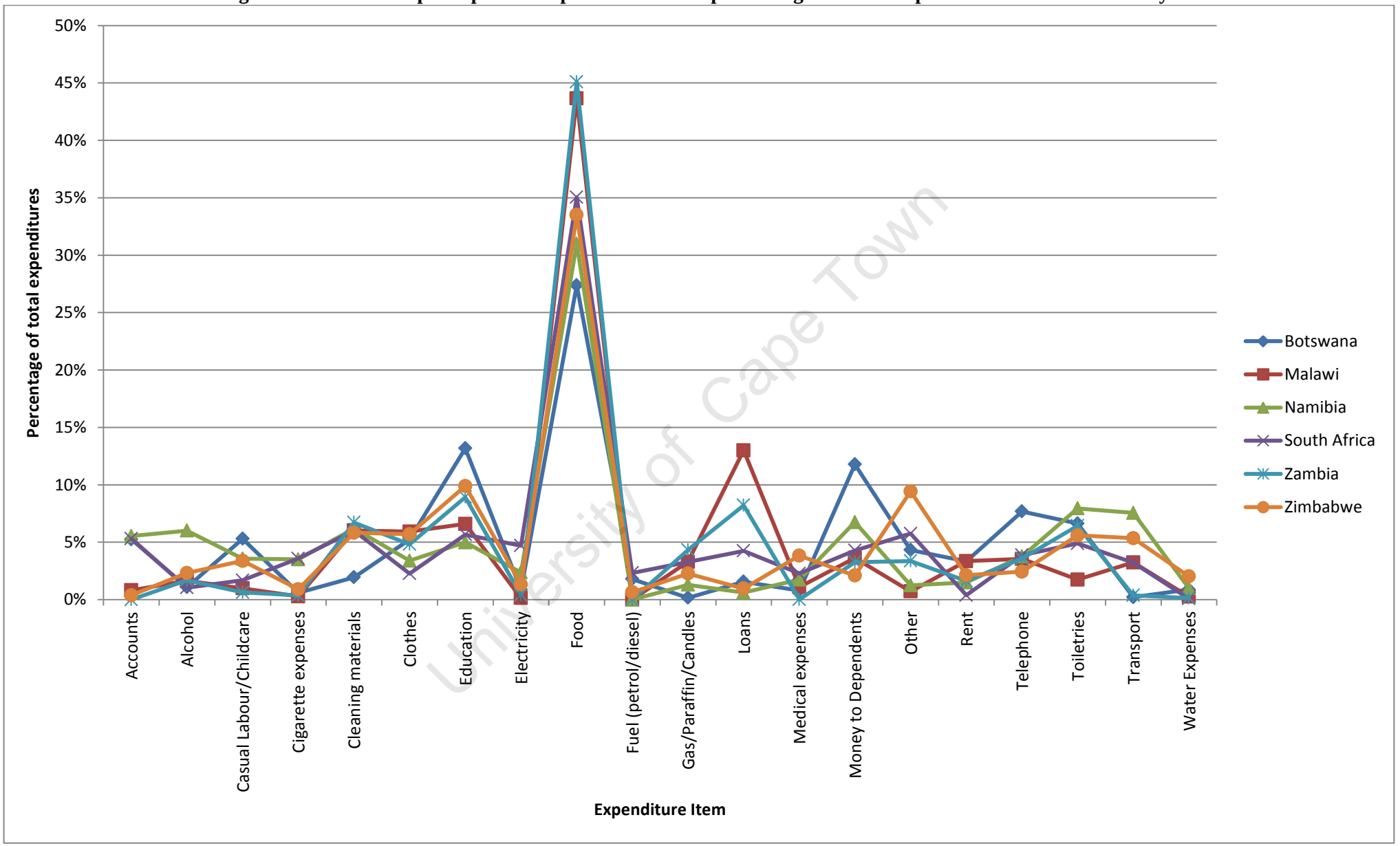


Figure 15 shows high non-staff payments towards loans in Malawi, Botswana and Zambia. Long distances between villages in Namibia explain the high expenditure on transport. The casual labour expenditure in Botswana was largely for cattle herders who live at cattle posts some distance from the village.

An important aspect of ecotourism's local economic development potential is whether or not money is being spent locally or is leaking out to larger cities. Expenditures on casual labour, money to dependents, gas/paraffin/candles, alcohol, rent, etc. were frequently made into the local economy, setting up important local knock-on effects. Leakages out of the local economy included expenditures on telephone airtime, some clothes, toiletries, etc., although these were still frequently made at a local shop, who bought the goods in from a larger centre. Expenditures at the clinic (medical), education, water, electricity are largely to local government and therefore important in terms of local economic development. Numerous small businesses (bakeries, grocery shops, tailors) were observed in the villages: ecotourism staff's ability to spend at these businesses stimulates cash flow in the local economy.

Figure 16 shows the expenditure percentages for all respondents (staff and non-staff) together in each country (see Appendix H for the associated tables). Malawi and Zambia have the highest percentage expenditure on food, while Zimbabwe had the highest percentage expenditure on education. A number of households in Malawi rely on annual cash crops (cotton, tobacco) resulting in the need for credit before the markets open each year.

Figure 16: Total sample reported expenditures as a percentage of total expenditures in each country



5.9. ECOTOURISM'S OVERALL IMPACT ON HOUSEHOLD WELFARE

One of the arguments given for ecotourism is that it is more than a source of employment: in rural areas where few opportunities exist for local residents to acquire marketable skills it can provide associated skills development, empowerment and training. To assess the importance of this aspect, respondents were asked whether or not they had ever had a permanent job before. Table 32 presents the results for staff and non-staff respondents in each country.

Table 32: Country study site comparison of percentage respondents who have had a permanent job before

National group sampled	% who have had a permanent job before
Botswana – staff (n=99)	21.2%
Botswana – non-staff (n=261)	21.1%
Malawi – staff (n=74)	39.2%
Malawi – non-staff (n=251)	27.1%
Namibia – staff (n=81)	40.7%
Namibia – non-staff (n=271)	18.8%
South Africa – staff (n=61)	26.2%
South Africa – non-staff (n=329)	28.6%
Zambia – staff (n=15)	73.3%
Zambia – non-staff (n=67)	25.4%
Zimbabwe – staff (n=55)	58.0%
Zimbabwe - non-staff (n=221)	28.1%

The ecotourism camp surveyed in Zambia had been owned previously by another tourism company and the majority of the staff were re-employed when ownership was transferred. As a result a high proportion of Zambian staff had been in permanent employment beforehand. Nonetheless, the majority of staff acquired their skills and training through ecotourism. In terms of staff respondents, the Botswana study sites had the highest proportion of 'first time' workers. Seventy-four percent of the total staff at the three surveyed camps in Botswana were from the local community, suggesting a significant contribution to skills training and development in this community. Table 33 shows the results for the total sample:

Table 33: Total sample: Percentage respondents who have had a permanent job before

	% who have had a permanent job before
Staff Respondents (n=385)	36.9%
Non-staff Respondents (n=1400)	24.8%
Total Respondents (n=1785)	**27.4%**

Sixty-three percent of staff respondents declared that their current job in ecotourism was their first permanent job; highlighting the broader development benefits that flow from good training programmes on the part of ecotourism companies.

Since 73% of the total sample had never had a permanent job before the lack of alternative permanent employment options is clear, as is the importance of tourism skills acquisition in the study areas. Poor training leads to poor service and a failure to meet the expectations of high-end ecotourism visitors. It also inhibits staff growth and empowerment; both observed to be important to job satisfaction and retention of staff.

Household welfare relies on both economic and non-economic factors. Thus, access to water, electricity, ablution facilities, etc., all impact on social welfare, as does the ability to invest in durable assets for the household. The ownership of durable assets can also protect households against economic shocks, where such assets can be sold if necessary. Investments in livestock ('traditional') and in household capital goods and consumer durables ('modern', such as sewing machines and tools) are in a sense equivalent strategies. Table 34 details the ownership of various assets analysed in the interview schedules.

Table 34: Staff and non-staff respondents: Country asset comparisons

National group sampled	Own a mobile phone	Own a car	Own a television	Mean no. of cattle	Mean no. of goats	Mean no. of chickens
Botswana – staff	93% (n=99)	41% (n=99)	27% (n=99)	10.54 (n=80)	Missing	Missing
Botswana – non-staff	46% (n=261)	8% (n=261)	4% (n=261)	4.7 (n=253)	1.59 (n=255)	3.22 (n=255)
Malawi – staff	72% (n=74)	3% (n=74)	24% (n=74)	0.05 (n=73)	2.61 (n=74)	3.55 (n=74)
Malawi – non-staff	27% (n=251)	5% (n=251)	0% (n=251)	0 (n=251)	1.41 (n=249)	2.31 (n=249)
Namibia – staff	96% (n=81)	65% (n=81)	46% (n=81)	28.73 (n=81)	Missing	Missing
Namibia – non-staff	41% (n=271)	16% (n=271)	14% (n=271)	29.64 (n=252)	62.67 (n=248)	2.24 (n=248)
South Africa – staff	95% (n=61)	28% (n=61)	54% (n=61)	2.44 (n=61)	0.98 (n=61)	7.67 (n=61)
South Africa – non-staff	91% (n=329)	14% (n=329)	72% (n=329)	1.28 (n=325)	0.50 (n=324)	3.81 (n=322)
Zambia – staff	87% (n=15)	0% (n=15)	60% (n=15)	0.13* (n=15)	0* (n=15)	10.87 (n=15)
Zambia – non-staff	36% (n=67)	2% (n=67)	2% (n=67)	0* (n=67)	0* (n=67)	7.88 (n=67)
Zimbabwe – staff	44% (n=55)	11% (n=55)	40% (n=55)	5.62 (n=55)	5.95 (n=55)	13.31 (n=55)
Zimbabwe - non-staff	6% (n=221)	7% (n=221)	0.9% (n=221)	3.65 (n=219)	2.29 (n=221)	8.37 (n=221)
Average* – staff**	**83% (n=385)**	**31% (n=385)**	**38% (n=385)**	**9.96 (n=365)**	**2.83** (n=205)**	**7.99** (n=205)**
Average* - non-staff**	**41% (n=1400)**	**9% (n=1400)**	**15% (n=1400)**	**7.22 (n=1367)**	**12.44 (n=1364)**	**4.08 (n=1362)**

Missing: these were not included in the interview schedules of the staff in Botswana and Namibia which were the first interviews conducted.
*As a result of tsetse flies, there was very little livestock in the Zambian study area.
**These figures were calculated only for the countries where the question was included in the interview schedule.
*** Calculated for the whole sample, not averages of the country figures in the table.

An aspect of household behaviour with immediate environmental impacts is the selection of fuels. Ninety-seven percent of non-staff respondents still use wood for cooking as opposed to 83% of staff respondents, whose ability to buy gas, generators and electricity allows them access to alternative cooking fuels. The figure for staff is, however, still high. The majority of households still collect their own firewood though some purchased charcoal from other households in the village (particularly in Malawi).

Eighty-two percent of staff respondents owned/had access in their households to mobile phones; these not only give individuals access to communication (and in some cases banking, weather reports, etc.), they also increasingly appear as status accessories in communities. In all countries, except Namibia, staff owned, on average, more cattle than non-staff respondents. In terms of 'all assets' in Table 34 there were, in general, more staff respondents who owned the specified assets than non-staff respondents. This not only adds to overall social welfare for households, but also (as discussed in the introduction) assists households to diversify their livelihoods.

5.10. DISCUSSION OF THE MAIN IMPACTS OF ECOTOURISM ON RURAL HOUSEHOLD INCOMES AND WELFARE

This chapter has sought to analyse the impact of ecotourism employment on rural household incomes, spending patterns and overall social welfare. Although the effects of ecotourism employment on income are important and can be significant in terms of rural development and poverty reduction, they are not a panacea, and the importance of other rural livelihoods should not be discounted. The next sections discuss some of the main results from this study, in the context of past literature which is briefly summarized in Table 35.

Table 35: Summary of past household income literature results

Author/s	Year	Country	Comments/Results
Household income			
Driscoll, Hunt, Honey & Durham	2011	Costa Rica	Tourism employees had a monthly income twice as high as non-tourism employees. Additionally, they found that tourism workers reported that their total monthly household incomes were 1.6 times higher than households where no-one works in tourism. They found no major differences in spending patterns between tourism employees and non-tourism sectors.
Lapeyre	2011b	Namibia	The regular, secure income from tourism allowed employees to better sustain their livelihoods, reduce their vulnerability to external shocks and opened up new opportunities to them
Richardson, Fernandez, Tschirley & Tembo	2012	Zambia	Households in GMAs enjoy higher levels of income overall, particularly through wage earnings and self-employment, but the gains accrue mostly to wealthier households (p. 1069)
Income sources			
Lapeyre	2011b	Namibia	Employment at the tourism lodge was the main source of income for most staff
Berkvens (1997), as cited in Bryceson	1999	South Africa	The value of pensions in South African households was considerable
Davis et al.	2009	A cross country comparison of rural income generating activities	A reduction in diversification of livelihoods as household wealth increases could be a sign that those at lower income levels are using diversification to overcome market imperfections. In the alternative case, i.e. a reduction in diversification as household wealth decreases could be an indication of the inability of poorer households to overcome barriers to entry in a second activity.
Factors impacting income			
Tellegen (1997), as cited in Bryceson	1999	Malawi	A positive correlation between non-agricultural earnings and level of education. She found that education was a key factor of success both at individual and household level.
Richardson et al. Zambian Demographic and Health Survey	2012 2007	Zambia Zambia	A positive relationship between household wealth status and educational attainment
Stem, Lassorie, Lee, Deshler & Schelhas Stronza	2001 2007	Costa Rica Peruvian Amazon	In their case studies people employed in tourism spent their 'new' income on household needs or 'family well-being' – basic subsistence, health, education and home improvements.
Sharpley & Naidoo	2010	Mauritius	Showed that tourism can make a contribution to poverty alleviation
Richardson et al.	2012	Zambia	The age of the household head was negatively associated with household income

5.10.1. IMPACT OF ECOTOURISM EMPLOYMENT

It has been shown that employment in tourism positively affects household incomes, but the effect on risk may be ambivalent. On one hand it can decrease risk if diversification increases, on the other hand it can increase risk if households become reliant on tourism in areas where tourism demand may be volatile (Mitchell & Ashley, 2010) or tourism may be susceptible to exogenous shocks, both economic and non-economic. It was evidenced in the present study that ecotourism can cause large changes in the household economy when it

occurs in relatively isolated areas where people are distant from markets and have few other income sources (see also Ashley & Roe, 2002; Jones, 2004a, 2004b; Scherl et al., 2004; Spenceley & Goodwin, 2007; Wunder, 1999, 2000, as cited in Stronza, 2007).

The employment offered by high-end ecotourism in these remote, rural areas was shown to offer a more secure, reliable source of income for households, who would often not otherwise have one (as there are few alternatives available or possible, or those options that are available are seasonal). The ability of rural people to work closer to home (than offered by most other forms of formal employment) reduces the trend towards urbanisation. In the staff interview schedules, support from other employed family members or a spouse was often the second most important source of income in the household; highlighting the importance of formal employment in general. The important point to note is that there are currently few alternatives to ecotourism in these remote areas.

Tourism's ability to increase incomes among local households is, however, only one measure of its success in poverty reduction. Other effects include its positive impacts on livelihoods in general, social welfare, skills development, local knock-on effects and on the empowerment of individuals and communities. These may have greater long-term significance and all were observed in this study.

The opportunity to learn new skills while working in the tourism industry creates opportunities to participate in other livelihood activities. It can also provide other livelihood strategies and opportunities, by improving chances of getting another job later if needed.

The impacts of increased incomes can also filter to non-employees, as observed in the study areas where income earned from ecotourism gave individuals greater economic power, allowing them to purchase goods and services from other community members, inducing a local tourism multiplier effect.

The benefits of ecotourism go beyond its ability to fund capital goods and to provide transferable skills to workers; it also appears to be stimulating education among children of employees who can now afford to educate their children. A positive link between education and incomes of rural households was well established in local literature (Richardson et al., 2012; Tellegen (1997), as cited in Bryceson, 1999) and was also found in this study (except in Namibia). The returns to education may be contested at a macro-economic level, but in this

study they seemed incontrovertible at a household level. The data collected certainly suggested that the number of years of formal education was a significant determinant of monthly household incomes. As discussed earlier in the chapter, spending on children's education is viewed as an investment in human capital; a household diversification strategy which can assist in long-term poverty reduction. Many respondents in the study mentioned a desire to educate their children to provide them with opportunities in the future.

Ogutu (2002) found that the accumulation of savings by individuals in his Kenyan study, was leading to social differentiation that went beyond traditional realms. This was borne in mind when assessing the 'benefits' of ecotourism in rural communities, as shifts or changes in wealth patterns can affect traditional community structures, the unintended consequences of which may, or may not, be positive. Ecotourism-based disparities in income distribution could be a potential problem, although staff respondents were often visibly 'better off' than non-staff respondents, no obvious disharmony was observed by the author. There were in fact aspirational effects; non-staff respondents said that they aspired to jobs in ecotourism so that they could also buy "*nice things*" and have "*nice houses.*"

5.10.2. INCOME DIVERSIFICATION AND HOUSEHOLD INCOME DETERMINANTS

This study found that ecotourism jobs paid better than any local alternatives, and staff stated monthly household incomes were consequently statistically significantly higher than average non-staff stated household incomes.

The literature has been ambiguous in its findings relating to diversification. On the one hand, a study in 1999 by Ellis found that as household income increases there is a decrease in the diversification of livelihoods (i.e. one high income member means other household members need not work elsewhere), as well as a decrease in reliance on agriculture. In this view, increased household income increases financial security and lowers the risk faced by households, thereby obviating the need for diversification.

On the other hand, Barrett, Reardon and Webb (2001) and Davis et al. (2009) found that as household income increased, there was an increase in diversification. As wealthier households have more income available they invest in assets, and diversify into other, non-farm, as well as more advanced farm activities.

The present study's findings showed non-uniformity across the sites surveyed. In South Africa, Malawi and Namibia increased income from ecotourism employment for staff respondents resulted in greater diversification. In some cases, within one household, family members were all educated and encouraged to seek employment, which also increased the number of household income sources. In Botswana, Zambia and Zimbabwe non-staff respondents tended to have more income sources than staff respondents, despite the latter typically having higher incomes; suggesting a reduction in diversification as household income increased. This could reflect the scarcity of reliable, secure livelihoods in the study areas, necessitating greater diversification for non-staff respondents. Alternatively, tourism income may have been seen as 'sufficient,' thereby decreasing the demand for other income sources. Staff's decreased diversification may render such households vulnerable in the event of external shocks that influence ecotourism, in general, or these operations in particular.

In line with Berkvens' (1997, as cited in Bryceson, 1999) case study of South African households, this study also found that, in South Africa, government grants (including pensions, child, foster and disability grants) were a major source of income; being the main source for 47.7% of non-staff respondents. South Africa and Namibia's state-based systems of income transfer payments provide much of the security enjoyed by families in rural areas. By contrast, in other southern African countries few such transfers are available. In these countries, ecotourism can become especially relevant for its effects on risk management and poverty reduction.

It has also been shown that a diversity of income sources can increase household wealth as well as income security. While ecotourism is a help, it was found that true diversification of income sources needs good quality general education.

5.10.3. EXPENDITURE PATTERNS OF RESPONDENTS

The flow of income from the ecotourist to the household begins with payments for goods and services (e.g. staying in an ecotourism camp or buying a local craft). Some of these payments accrue as direct income to households from goods, others accrue indirectly through the payment of wages and salaries. Some portion of these household incomes then flows to other households as money spent on local products and services. An insight into the details of the process is necessary to any understanding of ecotourism's ability to stimulate local socio-economic development.

This study found that the largest expenditure, for both staff and non-staff respondents, was on staple food purchases. The country Household Income and Expenditure Surveys for Namibia and Botswana made the same observation, as did case studies from Nigeria, Ethiopia and Zimbabwe conducted by the De-Agrarianisation and Rural Employment (DARE) programme (Bryceson, 1999).

The majority of households interviewed were found to purchase basic household goods, such as coffee, tea, sugar, washing powder, etc. from the local village store. Dry goods in these stores are stocked from main centres and perishables are largely supplied by local villagers; suggesting a large degree of local spending, with some leakage to main centres. It was observed in this study, and noted by Berkvens (1997, as cited in Bryceson, 1999), that the few people who have formal sector jobs in rural areas [such as in ecotourism] have the most stable monthly income. The resultant 'consumption smoothing' through the year lowers household risk.

While work in the ecotourism sector gives staff the ability to spend on 'luxury' items such as rent, telephone, gas, etc. and hence to improve their own household's welfare, it can also bring problems. Hire purchase agreements entered into by unsophisticated buyers can be problematic. Default on payments or the loss of employment and consequent inability to complete payments can all lead to blacklisting and future credit problems. The high expenditure by staff on accounts/lay-byes reflects this risk.

5.10.4. OVERALL HOUSEHOLD WELFARE

It has been argued that ecotourism employees' ability to invest in assets and human capital (through education) provides opportunities to cope with future vulnerability and the adoption of more efficient livelihood strategies. Ecotourism employment can therefore assist in long-term stability for households, reducing risk and vulnerability and therefore the stress faced by households. This can, however, deepen inequalities in rural areas as staff are able to reduce risks, earn more income and educate their families further, while other households remain 'trapped' in a subsistence lifestyle, vulnerable to shocks. As evidenced by the dependency figures (see Table 11 on page 71), community lifestyles help negate this somewhat as staff support their extended families and, in some cases, friends. As discussed, the local knock-on effects of staff spending also inject cash into local economies.

Much of neoclassical economics begins with the premise that more 'things' is equivalent to more utility. When conducting interviews across the communities, it appeared that the homes of ecotourism staff had, in general, more 'luxury' items (e.g. satellite television, generators, motor vehicles) and were larger than the average non-staff household. Such 'luxury' items can lead to overall improvements in household welfare and utility. In some study areas, for example Malawi, Zimbabwe and South Africa, tourism resulted in improved access to goods and services (such as schools, roads, clinics, etc.) which benefitted both staff and non-staff. Specific community development programmes and philanthropic donations, such as WS' Children in the Wilderness programme (www.childreninthewilderness.com), also bring socio-economic benefits to both staff and non-staff. This will be elaborated on in Chapter Seven.

Cattle are also frequently seen as security or savings (Hoon, 2004) and as a sign of wealth in many African communities (Low, Kemp & Doran, 1980). The ability to purchase cattle as a store of wealth therefore plays an important role in reducing future risk and adding to overall household security and status. As shown earlier in this chapter, outside of Namibia, ecotourism staff owned more cattle than other non-staff respondents. All livestock are a store of value that denote high wealth, as well as being a substitutable asset that can be sold as and when necessary in order to invest in other assets such as land or small businesses (Freeman et al., 2004). Another factor affecting household welfare, however, includes the distance of many households to livestock markets. If these markets are far away it results in a constraint for households to access the cash (frequently 'stored' in livestock) which they need to pay school fees, health expenses, etc. This was particularly the case in the Namibian study areas. Long (2002) emphasises that the opportunity to have cash income from ecotourism employment, and not to have to sell livestock whenever cash is needed, means that livestock can be kept and used instead as a buffer in times of crisis or shock. It has been shown that non-farm income, such as that earned in ecotourism, can be used to purchase livestock and build up herds, with a view to long-term household welfare. Many staff respondents mentioned to the author that they were 'investing' in livestock for their retirement and that this was a major benefit of ecotourism employment.

5.10.5. PEOPLE INDIRECTLY IMPACTED BY ECOTOURISM EMPLOYMENT

According to Lepper and Goebel (2010), the real significance of ecotourism employment to poverty alleviation and livelihood diversification is only fully realised when one considers the 'trickle down' of cash income, first to supported family members and then to the greater community. This chapter indicated that employment in ecotourism operations in remote, rural

areas can have a significant impact on a number of people, directly (wage payments to staff) as well as indirectly (staff payments to dependents). This is important to take into consideration when looking at the real impact of tourism in rural areas. The figures calculated in section 5.4. (Table 11, page 71) can be used by policy makers and ecotourism practitioners as baselines for the impacts of ecotourism employment in rural areas in different countries.

5.11. CONCLUSIONS AND POLICY IMPLICATIONS

Ecotourism employment has been shown to contribute to local socio-economic development, increased household incomes, improved household welfare and increased opportunities. However, the level of this contribution varies considerably between areas, different ecotourism operations and communities. In order to ensure sustainability, it is important that the contribution is maximised and that local people benefit (and see themselves benefitting) from ecotourism in their area. In most study sites, agriculture was largely subsistence, with an apparently excess supply of labour. The marginal product of labour in agriculture therefore tended to zero (in line with the classic models of Lewis and Fei-Ranis); the household does not therefore lose any income when a member moves into ecotourism employment.

Sharpley and Naidoo's (2010) Mauritian study showed that while tourism can contribute to poverty alleviation, the extent of its contribution will be influenced by government policy and/or regulatory interventions, commitment of all stakeholders (including the poor themselves) and the continuing health of the tourism sector. These factors can be difficult to control or manage, hence the need for other concurrent socio-economic development projects and reforms which assist in reducing local poverty.

The ability of ecotourism alone to significantly affect poverty levels in rural areas of Africa is limited (Butcher, 2006) mostly by the sizes of the operations and therefore, by the numbers of people they can employ. The direct impacts of income from employment are obviously the most significant poverty reduction benefits of ecotourism in rural areas. Additional mechanisms, whereby ecotourism can uplift rural people, are through philanthropic efforts as well as other community development projects. Other than increasing the size of the ecotourism operation and therefore employing more people, the integration of the camp into the local economy as a purchaser of locally produced goods and services can extend the impact of ecotourism operations to more families and therefore have a greater impact on poverty. Camps, in general, do not however purchase from communities, largely due to

problems relating to quality, timing and quantity of goods and services supplied[30] (this is discussed further in Chapter Seven).

It was found that the flow of ecotourism income into communities as staff spent a proportion of their monthly expenditures (approximately USD212 000 total expenditures per month for six countries in this study) in their villages, further extended the impact of ecotourism on poverty reduction to households other than those who have a family member employed in ecotourism (detailed analysis of this was however beyond the scope of this study).

The ability of ecotourism staff, through their regular monthly income, to invest in consumer durables and in productive assets can both enhance their welfare and improve their ability to cope with shocks, risks and other economic stresses. Although they were found to be diversifying their livelihoods, there was still a heavy reliance on ecotourism for support. In the long term, this can be risky. In an ideal world, ecotourism would be accompanied by the promotion of livelihood diversification, through skills training and development, institutional support and education.

Ways therefore to improve and ensure the sustainability of the benefits of those employed as well as other households in the area include:

- Ensuring that ecotourism operations are paying equitable wages and salaries to employees and that working conditions and accommodations are of a high standard;
- Providing ongoing skills training and development for all community members. Business skills training is important in terms of empowering communities and ensuring a more equal partnership between communities and the private sector. It was observed that business skills required include, amongst others, budgeting, marketing, accounting, reporting and communication.
- Encouraging the establishment of joint ventures between the private sector and communities, to extend benefits beyond employment (see Snyman (2012a));
- Up-skilling, educating and empowering communities to participate in joint ventures, lease agreements, etc. This can be done by government, NGOs, and/or the private sector;
- Providing financial training and courses to communities/ecotourism staff in order to ensure that communal funds, as well as individual salaries/dividends, are properly managed and that there are provisions for the future through savings, pension funds,

[30] Christian et al. (2011); Mitchell & Ashley (2010); Mitchell (2012); Rogerson (2012) provide more information on tourism value chains and ways to increase local multipliers.

education funds, etc. An important part of this would include providing financial advice to staff in terms of the potential pitfalls of buying on credit;

- Encouraging (and possibly even stipulating in tourism concession agreements) ecotourism operations to use local suppliers of goods and services;
- In conjunction with the latter, local suppliers may need guidance if they are to provide goods and services of the correct quality and quantity for ecotourism operations, invest money back into their businesses, and plan for the future;
- Promoting philanthropic donations towards projects which are appropriate and sustainable and do not require ongoing funding (more detail is given in Chapter Seven);
- Encouraging governments to invest in local infrastructure, such as hospitals, schools, road networks, provision of safe drinking water and communications: benefitting local communities as well as the tourism industry;
- Encouraging entrepreneurs to set up small businesses in villages to supply goods and services to local villagers as well as the tourism industry e.g. fresh produce markets, dry goods shops, crafts, etc.
- Setting up trainings and workshops on sustainable natural resource use. Evidence in this thesis showed that rural households still rely heavily on natural resources and it is, therefore, important, in terms of long-term poverty reduction, to ensure that use is sustainable.
- Introducing mentorships, internships and scholarship programmes to further education and provide skills training and development.

Many of the above are ostensibly functions of government, but it was clear that in a number of the six countries researched, the private sector and NGOs will have to fulfil this role.

This chapter has illustrated that ecotourism itself may bring immediate and important economic and financial benefits to people in rural areas, specifically ecotourism staff. Sharpley & Naidoo (2010) argue that it does not offer a long-term solution to the challenges of poverty and its overall reduction or alleviation, but that other national and international policies should address the needs of the poor and the causes of poverty. Ideally, ecotourism should operate in conjunction with other development policies that build capacity, educate, empower and uplift local communities. This requires local government and support institutions to be efficient, transparent, equitable and accountable to the community, land and resource rights to be secure, and a desire in the community to empower, educate and uplift themselves. What was argued in this chapter is that ecotourism *can* reduce poverty by

increasing real household incomes and opportunities in the long term and ecotourism employment was shown to reduce absolute poverty in rural areas, through steady, secure cash income provision in areas where there were few alternative income-earning opportunities.

CHAPTER SIX - ASSESSMENT OF THE MAIN FACTORS IMPACTING RURAL COMMUNITY ATTITUDES TOWARDS CONSERVATION AND ECOTOURISM

The extensive literature documenting the removal of local peoples from tribal lands in the name of conservation has already been discussed. So too has the contested relationship between communities, the conservation process and the wildlife and natural resources conserved. This chapter explores the factors currently influencing community members' attitudes towards conservation and ecotourism, their importance, and the implications of this information for policy makers engaged in conservation and ecotourism development. Readers familiar with community attitude research and approaches to it can move to section 6.2. without any loss of understanding.

6.1. BACKGROUND AND LITERATURE REVIEW

Over time it has become clear that a prerequisite for the sustainability of conservation in Africa is the inclusion of local populations in the various stages of conservation and ecotourism (Hoon, 2004; Musumali, Larsen & Kaltenborn, 2007). It has been premised that if communities receive benefits from conservation and ecotourism they will be more inclined to view it positively as a land use and to care for the natural resources in their area (Ahebwa, van der Duim & Sandbrook, 2011; Currie, 2001; Emptaz-Collomb, 2009; Halstead, 2003; Hulme & Murphree, 2001; Mbaiwa, 2004a, 2004b; McNeely, 1995, as cited in Groom & Harris, 2008; Wang & Pfister, 2008; Waylen, McGowan, Pawi Study Group & Milner-Gulland, 2009). Ecotourism offers local communities direct benefits from conservation, through wages, salaries and JVs, and indirect benefits as suppliers of goods and services to the ecotourism industry.

Numerous authors have also supported the notion that community support is critical to the long-term success of ecotourism operations and the concomitant conservation areas and associated biodiversity (Alexander, 2000; Allendorf et al., 2006; Ashley & Jones, 2001; Chandralal, 2010; Coria & Calfucura, 2011; Gillingham & Lee, 2003; Makindi, 2010; Nepal, 2002a, 2002b; Newmark et al., 1994; Sifuna, 2010). This chapter analyses community members' attitudes to identify the primary drivers of attitudes, highlighting the main factors influencing community support. It is hoped that these results will allow more focused planning in PAs and associated ecotourism operations.

6.1.1. THEORY OF SOCIAL DECISION-MAKING

Understanding community members' attitudes is important in understanding how and why people make certain decisions and on what these decisions are based. Ostrom (1990) conducted extensive research on collective action and social decision-making relating to the commons. She claimed that decisions made by communities relating to common pool resources frequently follow eight principles and that communal resource management does not necessarily lead to degradation (as put forward by Hardin (1968) in his 'Tragedy of the Commons'). In contrast to this institutional approach, Becker (1976) used utilitarian economics to examine human behaviour and decision-making. Despite their differences, both concurred on the fundamental economic principle applied throughout this study; incentives matter. The questions of particular importance to policy makers are; a) which incentives matter most to communities, and b) how can ecotourism operators provide these incentives to communities in their areas of operation? These will be the focus of this and the next chapter. In particular this chapter will ask whether ecotourism employment and the receipt of direct ecotourism benefits, through wages, result in more positive attitudes towards conservation and ecotourism. It will also ask what other factors are important in determining community members' attitudes and how these can be used to develop sustainable ecotourism projects and ensure long-term conservation.

In addressing community attitudes, social exchange theory assumes that potentially beneficial outcomes engender positive attitudes towards tourism (Andereck et al., 2005; Teye et al., 2002). The theory argues that local communities seek ecotourism's benefits if these equal or exceed what they give up in return, e.g. access to natural resources provided to ecotourism operations (Sirakaya et al., 2002; Teye et al., 2002). It postulates that individuals who perceive net benefits from an exchange are likely to view it positively, while those who perceive net costs are likely to view it negatively. This approach is supported by numerous studies showing residents dependent on the tourism industry for support, or perceiving it to offer net personal benefits, viewing its impacts more positively than others (Andereck et al., 2005; Brunt & Courtney, 1999 & Child, 2000, as cited in Groom & Harris, 2008; Sirakaya et al., 2002; Shibia, 2010; Wang & Pfister, 2008; Walpole & Goodwin, 2001).

6.1.2. DEFINING AND MEASURING ATTITUDES

Following Allport (1966, p. 24, as cited in Wang & Pfister, 2008, p. 85) and McDougall & Munro (1987, p. 87, as cited in Wang & Pfister, 2008, p. 85) we treat attitudes as

"*respondents' particular feelings and perceptions towards the stated questions relating to tourism and/or conservation.*"

Wang and Pfister (2008) found that people's attitudes towards tourism are influenced by their values and personalities, and therefore do not change quickly. Problematically, however, because attitudes are also influenced by pre-existing values (Schultz, 2001, as cited in Waylen et al., 2009) and by a variety of issues that are not always obvious to outsiders (Allendorf et al., 2006, as cited in Waylen et al., 2009) they may be difficult to understand and measure.

The importance of understanding attitudes lies in their theoretical connection[31] with behaviours (Manfredo et al., 2004, as cited in Lepp & Holland, 2006). The links between attitudes and behaviours are, however, not automatic (Scanlon & Kull, 2009). Even though Nunkoo and Ramkissoon (2011) found that residents in their Mauritian study engaged in behaviours congruent with their attitudes, this need not always be the case.

A problem facing this sort of study is, therefore, that attitudes are inconsistent. It is well known that the timing of surveys can influence results: an example is Hulme and Infield's (2001) findings that recent events can affect respondent's stated attitudes and perceptions. The present study found similar time weightings. For example, if elephants raided a maize field just prior to an interview, people were more negative towards conservation than they would have been had the incident not recently occurred. The influence of recent events was not confined to negative experiences. A distribution of benefits from the PA or tourism operation just prior to an interview appeared to yield unusually positive attitudes towards conservation and ecotourism. To obviate 'recent event' bias and provide a more accurate assessment of true attitudes, the interviews for this study were spread over a two year period. They were also conducted in six different countries, at different times of the year (i.e. prior to, during and after the harvest). As a result the impacts of recent events on community members' attitudes should have been relatively evenly distributed between positive and negative.

Conservation and ecotourism are inextricably interlinked, but it was observed that local people may see little connection between conservation and tourism and may, therefore, have contradictory attitudes towards them, i.e. they may not see wild animals as the driver of

[31] See Ajzen and Fishbein (1980), as cited in Lepp and Holland (2006, p. 611) for the Theory of Reasoned Action (TRA).

tourism but only as the cause of costs they bear. They may, therefore, be positive towards ecotourism as it provides jobs, yet negative about conservation as they experience HWC.

6.1.3. IMPORTANCE OF UNDERSTANDING COMMUNITY ATTITUDES

An understanding of factors influencing community members' attitudes towards ecotourism and conservation can assist in managing expectations. It can also be used in education and awareness-raising programmes to improve attitudes and garner support from communities living in and around conservation areas (Allendorf et al., 2006; Chidakel, 2011; Sifuna, 2010; Simelane et al., 2006). This understanding is also important because, as pointed out by Emerton (1999b), benefit distribution is a necessary, but not in itself sufficient, condition for communities to engage in wildlife conservation. Tourism and conservation managers' understanding of the perceptions and attitudes of local residents is naturally likely to influence the quality of their interactions with them. In this vein, Ap (1992) described such understanding as 'crucial' for the development of a successful and sustainable ecotourism sector, while Newmark et al. (1994) claimed it is an essential ingredient in the design and implementation of any project to promote conservation and development (both as cited in Gillingham & Lee, 2003).

A number of observers have noted that community attitudes towards ecotourism and conservation vary as a community develops, as well as being variable in time, space and location (Emerton, 1999b; Faulkner & Tideswell, 1997, as cited in Sirakaya et al., 2002). Given that modern ecotourism involves local communities, the successful introduction, implementation and sustainability of such involvement requires an understanding of the cultural, economic, and social characteristics of the communities with which operators are engaging. This was the basis of Simelane et al.'s (2006) view that it is important that inter- and intra-community differences be understood and considered in all ecotourism policy development and implementation.

A number of past ecotourism and conservation projects have had limited success through poor understanding of local communities' expectations, attitudes and socio-economic situations (observed in Botswana, Namibia and South Africa). The understanding of beliefs and attitudes is a key component of successful long-term conservation management plans (Allendorf et al., 2007; Browne-Nuñez & Jonker, 2008; Currie, 2001; Groom & Harris, 2008; Weladji et al., 2003), while an understanding of the factors influencing community members'

attitudes to and tolerance of wildlife is important for the success of programmes to mitigate HWC (Zimmerman et al., 2005, as cited in Groom & Harris, 2008).

An example of an issue that can influence relations between conservation and communities is the role of livestock in the context of people's livelihood security. The cultural and economic importance and value of livestock, in most rural areas in Africa, frequently outweighs the value of wildlife for many residents (Long, 2002). In turn, communities may be negative towards wildlife because of the potential diseases they can spread to livestock; this was however not a complaint observed in this study. The value attached to livestock will, therefore, also influence community members' attitudes to wildlife and ecotourism. At a macro-level an example is Botswana's decision to erect veterinary fences to control foot-and-mouth disease which profoundly impacted wildlife migrations and conservation (see Mbaiwa & Mbaiwa, 2006).

Creating and maintaining positive attitudes towards conservation is especially important when other mechanisms for changing behaviour, such as regulation, are inappropriate or ineffective (Waylen et al., 2009). Over the years, regulation has frequently failed to ensure conservation success and the resultant need for a more appropriate and effective means of ensuring conservation has arisen.

Important for the long-term sustainability of ecotourism as a land use in Africa is that it promotes biodiversity conservation in PAs (to sustain the megafauna attractive to tourists) and promotes positive conservation behaviours in communities adjoining PAs. It is surmised that these positive behaviours are promoted by the receipt of positive benefits (Wang and Pfister, 2008; Waylen et al., 2009).

6.1.4. IMPACT OF ECOTOURISM EMPLOYMENT OR THE RECEIPT OF OTHER BENEFITS ON ATTITUDES

It is frequently posited that employment in ecotourism increases people's awareness of the importance of conservation and ecotourism (Bookbinder et al., 1998; Muganda et al., 2010; Walpole & Goodwin, 2001). For those community members not currently receiving direct benefits from tourism, the perception or belief that they could receive benefits in the future can also serve as a motivating factor in instilling positive attitudes (Walpole & Goodwin, 2001). This anticipation of future benefits could also explain the initial enthusiasm of communities towards tourism operations (Alexander, 2000; Sekhar, 2003; Sirakaya et al.,

2001; Doxey, 1975, as cited in Walpole & Goodwin, 2001). Over time, if these benefits are not realised, communities may become disillusioned and dissatisfaction may start to cause problems between the community and the ecotourism operator or PA authority (Alexander, 2000). This has been documented by Boggs (2000, 2004) at some CBNRM projects in Botswana and was also witnessed by the author.

Naturally, ecotourism itself can influence attitudes to conservation. In Waylen et al.'s (2009) study in Trinidad ecotourism significantly affected perceptions, with those households directly benefitting from ecotourism having a better knowledge of local natural resources and, in general, a greater awareness of conservation issues. They also found that other socio-economic factors, such as education and income, affected attitudes but the ecotourism effect was still present after accounting for these. Some studies, however, did not find a correlation between tourism/economic benefits and positive attitudes to conservation (Stem et al., 2003; Walpole & Goodwin, 2001) or suggested that economic benefits alone were insufficient to encourage conservation (Stem et al., 2003; Stronza & Pégas, 2008).

While Waylen et al. (2009) suggested that existing evidence does not clearly support the assumption that income from ecotourism changes local awareness and attitudes they do suggest that further research is required. It was, however, observed during the research for the present study that the gap between the expectation and the perceived benefits delivered was significant. The one important implication is that managing public relations may be more important than actual benefit delivery in determining the long-term viability of private sector ecotourism operator/community relations.

Although past research has shown that many communities have positive attitudes towards conservation (Alexander, 2000; Currie, 2001; de Boer & Baquete, 1998; Mehta & Heinen, 2001; Sekhar, 2003; Weladji et al., 2003) and ecotourism development (Chandralal, 2010; Lepp, 2007; Mehta & Kellert, 2002), there was little consensus found in terms of the factors impacting attitudes. For example, Stem et al. (2003) and Stronza and Gordillo (2008) found that non-economic benefits, such as new skills, broader experiences in managing projects and people, the exchange of ideas, expanded circles of contacts, empowerment and support for community efforts, could influence attitudes towards conservation and tourism. These non-economic benefits are, however, often more difficult to measure and assess.

In summary, studying community members' attitudes towards tourism and conservation is important for a number of reasons (Snyman, 2012b):

i) it can disclose whether or not specific attitudes exist towards a PA and/or tourism operation which, in some cases, may help explain behaviour (Lepp & Holland, 2006);
ii) it can inform policy makers and managers which factors influence attitudes and this can assist with prioritising avenues for action (found by Anthony, 2007; Browne-Nuñez & Jonker, 2008);
iii) it can reveal opportunities for improving relationships and outreach programmes with communities living adjacent to PAs (Anthony, 2007);
iv) it can assist in developing appropriate benefit-sharing and cost-minimising programmes for communities based on their attitudes and experiences;
v) it can highlight areas important for education and training programmes; and
vi) it can assist in assessing the impact of 'costs' associated with ecotourism through an analysis of HWC attitudes.

If conservation is to remain a primary land use in rural areas of Africa, it is important that communities living in and around such areas have an appreciation and understanding of conservation, as well as the ecotourism frequently associated with PAs. As Moswete and Darley (2011, p. 10) stated "*the future success of the tourism industry in Africa is dependent on and will be determined by availability of robust data from local people as well as strategic use of gathered information to improve tourism.*"

There is widespread consensus that community attitudes matter and these attitudes may vary over time and may be influenced by various factors (e.g. changing incomes, land management arrangements, tenure systems,[32] education, recent experiences, and degree of politicisation). In an attempt to capture the relevant issues this chapter will look at the impact of various socio-economic variables on community members' attitudes across different countries.

Despite differences between communities, numerous similarities and areas of commonality appeared between the remote, rural African villages covered in the course of this study. The data collected in the interview schedules has, therefore, been treated in a variety of ways. Aggregated across the entire six country sample, it has been used to give overall results of community members' attitudes in southern Africa. Analysed at a national level, it allows

[32] Marongwe's (1999, p. 10) definition of a tenure system as "*a functional relationship between individuals and groups of individuals in which rights and obligations with respect to control and use of land are defined and enforced,"* will be used in this chapter.

analysis of country attitudes and the various factors impacting on them. A data breakdown to show ecotourism staff and non-staff respondents separately allows the impact of ecotourism employment on attitudes to be analysed and outlier communities to be investigated. Despite the many attitudinal studies that have been conducted, the results are not always comparable, the studies having been conducted under different circumstances and with different measurement tools. This study was however conducted consistently over the six study countries and should, therefore, allow a valid comparison of attitudes across countries, PAs, tourism operations and communities.

Using descriptive statistics and Probit models, the analysis begins with an examination of national conservation and tourism attitudes followed by a breakdown of the aggregated, as well as individual, impacts of specific socio-economic factors on attitudes.

6.2. ANALYSIS OF CONSERVATION/TOURISM ATTITUDES IN EACH COUNTRY

This section begins with a simple analysis, including a disaggregation of staff and non-staff respondent attitudes in each country, to highlight the main conservation and tourism attitudes in the different study sites.

Throughout the chapter the interview schedule attitude questions[33] (see Appendices E and F) include the following shortened descriptors (in italics):

- Attitude question one: '*Positive change*': Do you feel there has been a positive change in your village as a result of tourism in the area? Since a number of factors could influence respondents' answers to this question, it is excluded from the Probit analysis and is only analysed descriptively.
- Attitude question two: '*Create jobs*': Do you feel tourism creates jobs for local people in the area?
- Attitude question three: '*Reduce poverty*': Do you think tourism reduces poverty in the area (makes local people less poor)?
- Attitude question four: '*Conservation important*': Do you think it is important to conserve trees, animals, plants, water, etc., i.e. do you feel that conservation is important? The importance that respondents gave to conservation is likely to influence their answers to other attitude questions. This question is therefore included as an independent variable in the attitudinal Probits later in the chapter.

[33] Attitudes one, two and three are referred to as the 'tourism attitudes.'

- Attitude question five: '*Problem animals*': Do you have any problems with wild animals at home? Respondents answering 'no' to this question were deemed to be more positive towards conservation than those who responded 'yes.'

Various attitudes are analysed in Tables 36 and 38, showing that respondents in Zambia had the most positive overall attitudes towards tourism and conservation. *A priori* this may have been driven by the site's characteristics; South Luangwa National Park is remote, has few alternative employment opportunities and poverty levels are high; ecotourism is thus seen in a positive light in terms of the difference it makes in these villages.

Table 36: Total sample: Summary of positive tourism and conservation attitudes by location

Attitude*	Botswana	Malawi	Namibia	South Africa	Zambia	Zimbabwe	Average
% respondents who felt there had been a *positive change* in the villages due to tourism	51% (n=360)	42% (n=307)	54% (n=249)	55% (n=291)	77% (n=80)	75% (n=229)	**56% (n=1464)**
% respondents who felt tourism *creates jobs* for local people	80% (n=360)	54% (n=308)	75% (n=289)	76% (n=327)	94% (n=80)	74% (n=244)	**73% (n=1581)**
% respondents who felt tourism *reduces poverty* in the area	75% (n=360)	43% (n=310)	52% (n=242)	53% (n=245)	78% (n=75)	73% (n=233)	**60% (n=1435)**
% respondents who felt *conservation was important*	88% (n=360)	84% (n=320)	94% (n=339)	92% (n=364)	96% (n=82)	88% (n=254)	**90% (n=1707)**

*Not all respondents answered all attitude questions, sample sizes, therefore, differed between questions.

During discussions with respondents it was clear that many were aware of the potential benefits to be derived from tourism and conservation. In many cases, however, they were not personally receiving any benefits, and were therefore not as positive about tourism or conservation, as those receiving direct benefits. For non-staff respondents, the hope of receiving benefits in the future was sometimes enough to instil positive attitudes.

Ninety percent of all respondents felt that conservation was important. This could be because of complacency bias; a systematic error whereby respondents tend to answer what they think the interviewer wants to hear. During the interviews it was, however, the author's perception that most respondents did in fact attach positive values to conservation. This was largely due to the importance of natural resources as assets for future generations e.g. for building, food, tourism employment, etc.

To provide context for Table 38, Table 37 outlines the various natural resource and problem animal compensation policies in the study areas.

Table 37: Institutional background to attitudinal interview schedule questions

Policy	Botswana	Malawi	Namibia	South Africa	Zambia	Zimbabwe
Natural resource use in conservation areas	Allowed	Not Allowed	Allowed	Not allowed in Makuleke; collection of medicinal plants allowed Mpukane	Not Allowed	Not Allowed
Compensation schemes for losses to wildlife	Government administered - time delays mentioned	No compensation	Conservancy-run compensation system	No compensation	Government administered - time delays mentioned	No compensation
Community visits to conservation areas	Not encouraged	Encouraged by WS – weekly school visits	Encouraged by Conservancy	Encouraged by WS through Children's programme	Not encouraged	Encouraged by WS through Children's programme

Table 38 analyses other issues relating to conservation and indicates that the majority of respondents (except in Namibia) reported problems with wild animals (average: 79%), emphasising the direct costs of conservation borne by these communities.

In the Namibian conservancies, community members are allowed to collect natural resources in the conservancy and a high percentage (76%) of respondents were found to be doing so; highlighting the importance of natural resources, and access to them, for rural communities in these areas. Table 38 also shows that other communities were not collecting natural resources. This could, however, be an underestimate of use, as respondents may have feared confessing to illegal activities.

Two further questions relating to the PA were included in all interview schedules, except for Botswana and Malawi. Respondents were asked if they had ever entered the PA and whether or not they would like to visit the PA with their family. There was a statistical difference found [χ^2 (1) = 4.582, $p<0.05$] between staff and non-staff respondents in terms of having entered the PA in the past. Surprisingly, more non-staff respondents (31%) reported having been into the PA than staff respondents (23%). The main reasons given for entering the PA were to visit family, passing through, for pleasure and (in Namibia) to collect natural resources.

Table 38: Total sample: Summary of other tourism and conservation attitudes by location

Attitude	Botswana	Malawi	Namibia	South Africa	Zambia	Zimbabwe	Average
% respondents who *collect natural resources* from the conservation area	Missing*	8% (n=325)	76% (n=352)	21% (n=386)	1.2% (n=82)	5% (n=276)	**19% (n=1520)**
% respondents who had *problems with wild animals*	81% (n=360)	92% (n=325)	50% (n=352)	63% (n=390)	98% (n=82)	89% (n=276)	**79% (n=1772)**
% respondents who *would like to visit the conservation area***	Missing*	69% (n=314)	Missing*	93% (n=390)	95% (n=82)	94% (n=276)	**59% (n=1062)**

Not all respondents answered all attitude questions, sample sizes, therefore, differed between questions.
*Missing: These questions were not included in the interview schedule for this country.
**'Like to visit' was explained to respondents as visiting 'as a tourist' to see the PA. When those not wanting to visit were asked why they didn't want to visit, the main reason given was because they were frightened of the animals in the PAs.

Table 39 shows the results for the tourism and conservation attitudes in each country and for staff and non-staff respondents separately. The Zambian non-staff respondents held the most positive attitudes towards tourism and conservation. Questions relating to tourism attitudes showed that, overall, staff were more positive than non-staff respondents, particularly so in Malawi and less so in South Africa.

Table 39: Staff and non-staff sample comparison of attitudes to tourism and conservation by location

National group sampled	% who felt that there had been a *positive change* in the villages due to tourism	% who felt that tourism *creates jobs* for local people	% who felt that tourism *reduces poverty* in the area	% who *collect natural resources* from the conservation area	% who felt that *conservation was important*	% who had *problems with wild animals*	% who would like to *visit the conservation area*
Botswana staff	88% (n=95)	97% (n=99)	87% (n=98)	2% (n=99)	98% (n=98)	52% (n=86)	Missing
Botswana non-staff	36% (n=213)	74% (n=234)	70% (n=232)	Missing	84% (n=250)	92% (n=261)	Missing
Malawi staff	79% (n=74)	72% (n=74)	63% (n=73)	1.3% (n=74)	99% (n=74)	84% (n=74)	91% (n=72)
Malawi non-staff	31% (n=234)	49% (n=234)	37% (n=237)	10% (n=251)	80% (n=246)	94% (n=251)	63% (n=242)
Namibia staff	88% (n=77)	98% (n=81)	85% (n=78)	24% (n=81)	99% (n=81)	32% (n=81)	Missing
Namibia non-staff	44% (n=172)	68% (n=208)	42% (n=164)	92% (n=271)	93% (n=258)	55% (n=271)	Missing
South Africa staff	55% (n=54)	74% (n=60)	61% (n=55)	39% (n=61)	100% (n=61)	69% (n=61)	100% (n=61)
South Africa non-staff	55% (n=237)	76% (n=267)	51% (n=190)	17% (n=325)	90% (n=303)	61% (n=329)	92% (n=329)
Zambia staff	87% (n=15)	100% (n=15)	80% (n=13)	7% (n=15)	100% (n=15)	93% (n=15)	100% (n=15)
Zambia non-staff	75% (n=65)	93% (n=65)	78% (n=62)	0% (n=67)	96% (n=67)	99% (n=67)	94% (n=67)
Zimbabwe staff	75% (n=47)	89% (n=54)	84% (n=52)	4% (n=55)	98% (n=54)	64% (n=55)	100% (n=55)
Zimbabwe non-staff	75% (n=182)	70% (n=190)	70% (n=181)	5% (n=221)	86% (n=200)	96% (n=221)	92% (n=221)
Total staff sample average**	**79% (n=361)**	**88% (n=383)**	**77% (n=369)**	**13% (n=385)**	**99% (n=383)**	**61% (n=372)**	**98%* (n=203)**
Total non-staff sample average**	**49% (n=1103)**	**69% (n=1198)**	**55% (n=1066)**	**24% (n=1135)**	**87% (n=1324)**	**79% (n=1400)**	**85%* (n=859)**

Not all respondents answered all attitude questions, sample sizes, therefore, differed between questions.
Missing: These questions were not included in the interview schedule for this country.
*Calculated including only those countries where the question was included.
**The staff and non-staff averages are based on the whole sample, not the averages for each country.

It was observed in Malawi that where respondents were negative about tourism and conservation and complained about problem animals, they were also more likely to engage in fish poaching and to enter the National Park illegally. This threatens the long-term sustainability of conservation and ecotourism. Based on the author's experience in communities, it is important that in the future, where a high percentage of respondents had problems with wild animals (conservation costs) combined with less positive attitudes, communities need to receive benefits from ecotourism and conservation, or measures to mitigate HWC. The mitigation of HWC is discussed in more detail in Chapter Seven and Appendix L.

6.2.1. REASONS GIVEN FOR THE IMPORTANCE OF CONSERVATION

Respondents who felt that conservation was important were asked to elaborate on their reasons. A number of different rationales emerged (see Table 40). Many respondents said it was important for the future/for their children. Others reasons included: for tourism, to be able to use the natural resources in the future for food, building, firewood, etc. Many respondents said that the 'trees bring rain and/or prevent wind.' Some respondents said that conservation was important for tourism, but not for people's crops/livestock and others said that it was important to conserve trees and plants, but not animals because they were dangerous. A number of respondents gave more than one reason for the importance of conservation and others said that they knew it was important (often because they had been told at school), but did not know why. In some areas, respondents said it was important because the government said so, reflecting the old concept of 'fortress conservation' that was prevalent in Africa, particularly in the old colonies (such as Malawi, Zimbabwe and Zambia). It was observed that the sophistication of answers given depended to some degree on the level of education and whether or not the respondent received benefits from conservation/tourism. Age was also important in some study areas; in Mpukane community in South Africa many of the older respondents were angry that they now had to get permits to fish, when they had always been allowed to fish in the past; a few older respondents in the Makuleke community mentioned not having received any benefits from tourism to date and preferring to have moved back to their land when it was returned to the community, in order to receive direct benefits from natural resources.

Table 40: Main reasons given for the importance of conservation by location

National group sampled	Main reasons given for the importance of conservation
Botswana staff	Tourism (35%), Natural beauty & resources (18%), Future/Children (14%)
Botswana non-staff	Tourism (26%), Future/Children (9%), For income (7%)
Malawi staff	Tourism (60%), Future/Children (12%), For jobs (7%)
Malawi non-staff	Tourism (46%), Future/Children (6%), For income (5%)
Namibia staff	Tourism (42%), Future/Children (29%), Meat from animals/Firewood from trees (4%)
Namibia non-staff	Tourism (26%), Meat from animals/Firewood from trees (19%), Future/Children (15%)
South Africa staff	Future/Children (33%), Tourism (26%), Natural resources (16%)
South Africa non-staff	Future/Children (22%), Trees prevent wind (16%), Natural resources (10%)
Zambia staff	Jobs (40%), Tourism (27%)
Zambia non-staff	Tourism (25%), Meat from animals (15%), Benefits the community (15%)
Zimbabwe staff	Tourism (40%), Future/Children (22%), Jobs (18%)
Zimbabwe non-staff	Didn't Specify a reason (21%), Use natural resources for thatching, water, firewood, etc. (14%), Tourism (13%)

A more detailed analysis of the factors impacting tourism and conservation attitudes follows in the next sections; Probit models are used in order to ensure all factors are analysed *ceteris paribus*.

6.3. PROBIT MODELS FOR TOURISM AND CONSERVATION ATTITUDES IN EACH COUNTRY

Probit models were run, in each country, for three of the attitude questions ('*create jobs', 'reduce poverty,'* and *'problem animals'*). These assess the impact of various factors on these attitudes in each of the study countries, holding all other factors constant. The variables in the Probit models are presented in Table 41. Selection of the demographic variables in the table was found by statistical analysis (see Appendix I) and an extensive literature review.

Table 41: Variables included in the attitude Probit models

Variable name	Description
WSemployed	Was the respondent currently employed by Wilderness Safaris (i.e. in high-end ecotourism)? Dummy variable coded 1 for Yes and 0 for No
Age	Age of the respondent (in years)
Male	Gender of the respondent. Dummy variable coded 1 for Male and 0 for Female
Children	Respondent's number of children
Dependents	Respondent's number of dependents
Nohh	Number of people living in the household
Nounder20	Number in the household under 20 years old
Male household head	Gender of the household head. Dummy variable coded 1 for Male and 0 for Female
agehhhead	Age of the household head (in years)
yearseducated	Respondent's number of years of formal education
currentlyemployed	Was the respondent currently in other formal employment, not with WS? Dummy variable coded 1 for Yes and 0 for No
noincomesources	Number of income sources in the household
logincome	Natural log of total monthly household income
familyemployednumeric	Did the respondent have any family employed in tourism/conservation? Dummy variable coded 1 for Yes and 0 for No
Conservationimportant	Do you think conservation is important? Dummy variable coded 1 for Yes and 0 for No
tourismyears	Number of years the tourism camp has been operational
populationdensity	Population density of the study area
distance	Approximate distance between the tourism operation and the community
Country 1: Botswana	Dummy variable for respondents from Botswana
Country 2:Malawi	Dummy variable for respondents from Malawi
Country 3: Namibia	Dummy variable for respondents from Namibia
Country 4: South Africa	Dummy variable for respondents from South Africa. South Africa was the base dummy in the aggregated Probits.
Country 5: Zambia	Dummy variable for respondents from Zambia
Country 6: Zimbabwe	Dummy variable for respondents from Zimbabwe

The tables below present the Probit model results, reporting marginal effects for each attitude question. In this section analyses were disaggregated by country in order to determine the specific country nuances. Probit models require a larger sample than OLS regression because they use maximum likelihood estimation techniques. The Zambian case study had fewer entries than the other countries making Probit analysis unfeasible; a conventional OLS regression was therefore used.

Appendix J contains the STATA Probit output for each attitude question by country.[34] Although variables affected attitudes differently in each country, a trend was observed in the impact of education on attitudes, with more educated respondents being more positive, *ceteris paribus*. Respondents employed by WS and respondents with family employed in tourism/conservation were also generally more positive towards tourism and conservation, *ceteris paribus*. Statistically, demographic variables had inconsistent impacts on attitudes.

[34] Probit output tables for the aggregated samples (staff, non-staff and the whole sample) are available from the author.

In the Zambian sample, although overall attitudes towards tourism and conservation were positive (see Table 39), there were few significant variables. In the Zimbabwean Probit only the fifth attitude question (*'problem animals'*) was statistically significant, suggesting that the chosen model did not explain attitudes in Zimbabwe very well. Caution should therefore be exercised when drawing inferences from the Zimbabwean analysis.

Tables 42 to 44 present the Probit results showing statistically significant variables.

Table 42: Probit results, reporting marginal effects, for attitudinal question two: Does tourism create jobs for local people?

Variable	Botswana (n=275)	Malawi (n=276)	Namibia (n=224)	South Africa (n=286)	Zambia (n=76)	Zimbabwe (n=206)
WS employed	.060 (.052)	-.010 (.103)	.079** (.029)	-.180** (.085)	.158* (.086)	.132* (.060)
Age of the respondent	.002 (.002)	.001 (.006)	-.0001 (.001)	.0003 (.001)	-.005 (.013)	.0008 (.003)
Male respondent	.005 (.042)	.239** (.085)	.005 (.033)	-.019 (.036)	-.103 (.099)	-.007 (.062)
No. of children	-.004 (.010)	.001 (.017)	.009 (.007)	.006 (.010)	-.004 (.014)	.008 (.014)
No. of dependents	.003 (.006)	-.010 (.012)	-.003 (.002)	-.006 (.005)	.009 (.010)	-.009 (.010)
No. of people in the household	-.004 (.007)	.083** (.033)	.006 (.004)	-.001 (.007)	.005 (.030)	.003 (.011)
No. of people in the household under 20 years old	.004 (.008)	-.084** (.036)	-.006 (.005)	-.003 (.010)	-.013 (.031)	-.024** (.011)
Male household head	-.039 (.043)	-.177* (.089)	.004 (.033)	.071* (.041)	-.028 (.087)	-.038 (.060)
Age of the household head	-.001 (.001)	-.002 (.006)	.001 (.001)	.0006 (.001)	.008 (.013)	.0005 (.002)
No. of years formally educated	.007 (.006)	.027** (.010)	.005 (.004)	.006 (.001)	.012 (.010)	.010 (.010)
Currently formally employed	-.051 (.083)	-.140 (.163)	.026 (.030)	.005 (.063)	.141 (.116)	Predicts success perfectly[35]
No. of household income sources	.054 (.036)	-.051 (.053)	-.024 (.019)	-.009 (.021)	.027 (.031)	.065* (.036)
Log of monthly household Income	.001 (.014)	.030 (.028)	-.017 (.014)	.009 (.026)	-.039* (.022)	-.011 (.023)
Family employed in tourism/conservation	.061 (.038)	NI	.062* (.039)	.055* (.029)	-.054 (.053)	.103* (.059)
Respondent felt that conservation was important	.215** (.113)	.143 (.101)	Predicts success perfectly	.391 (.415)	.405** (.152)	-.054 (.107)
Pseudo R^2	0.1579	0.1152	0.2073	0.1818	0.1206	0.0852
Prob > Chi Squared	0.0055**	0.0001**	0.0081**	0.0042**	0.0786*	0.3672

The figures in parentheses are standard errors. **, and * indicate significance at the 5% and 10% levels, respectively.

[35] i.e., all respondents currently formally employed in Zimbabwe felt that tourism creates jobs for local people.

Being employed by WS and having family employed in tourism/conservation were shown to impact significantly on whether or not respondents felt tourism creates jobs for local people or not. Having family employed resulted in more positive attitudes (except in Zambia) as did employment with WS (except in Malawi and South Africa). In all countries, formal education had a positive impact on whether or not the respondent felt that tourism creates jobs (only significant in Malawi), as it did on whether or not they felt conservation was important (only significant in Botswana and Malawi).

Table 43: Probit results, reporting marginal effects, for attitudinal question three: Does tourism reduce poverty in the area?

Variable	Botswana (n=272)	Malawi (n=278)	Namibia (n=195)	South Africa (n=217)	Zambia (n=71)	Zimbabwe (n=199)
WS employed	-.163* (.105)	.079 (.100)	.173** (.072)	-.091 (.086)	.276* (.158)	.072 (.067)
Age of the respondent	.003 (.002)	-.007 (.006)	-.001 (.003)	.0004 (.003)	-.019 (.024)	-.003 (.003)
Male respondent	.056 (.050)	.151* (.088)	.212** (.077)	.014 (.053)	-.078 (.178)	-.087 (.056)
No. of children	-.007 (.014)	.020 (.017)	-.007 (.010)	.002 (.020)	-.003 (.027)	.024 (.014)
No. of dependents	.014* (.007)	-.00009 (.012)	-.009 (.006)	-.014 (.009)	.008 (.019)	.012 (.011)
No. of people in the household	.005 (.009)	-.004 (.030)	-.004 (.004)	.001 (.012)	-.053 (.052)	-.007 (.012)
No. of people in the household under 20 years old	-.015 (.010)	-.031 (.034)	.008 (.009)	.002 (.019)	.053 (.055)	.005 (.011)
Male household head	-.042 (.051)	-.205** (.094)	-.076 (.071)	.021 (.057)	-.126 (.156)	-.077 (.051)
Age of the household head	-.001 (.001)	.001 (.006)	-.002 (.002)	.002 (.002)	.017 (.024)	-.0002 (.002)
No. of years formally educated	.010 (.008)	.017 (.010)	.007 (.009)	-.003 (.010)	.017 (.019)	.010 (.010)
Currently formally employed	-.206** (.119)	.107 (.163)	-.110 (.093)	.041 (.082)	.325 (.221)	Predicts success perfectly
No. of household income sources	-.034 (.042)	.043 (.053)	-.006 (.045)	-.016 (.034)	.026 (.056)	.007 (.033)
Log of monthly household Income	.025 (.019)	.029 (.028)	.043 (.031)	-.043 (.043)	-.063 (.040)	.005 (.022)
Family employed in tourism/conservation	.104** (.046)	NI	.063 (.075)	.137** (.047)	.083 (.097)	.062 (.054)
Respondent felt that conservation was important	.193* (.128)	.224** (.092)	.118 (.222)	Predicts success perfectly	.682** (.274)	.103 (.167)
Pseudo R^2	0.1255	0.1090	0.1517	0.1175	0.1435	0.1176
Prob > Chi Squared	0.0099**	0.0001**	0.0038**	0.0558*	0.0616*	0.1492

The figures in parentheses are standard errors. **, and * indicate significance at the 5% and 10% levels, respectively.

Respondents who felt conservation was important, or who had family employed in tourism/conservation, were more likely to say that tourism has helped reduce poverty in their

area. The same opinion came from most WS employees (notably excepting those in Botswana and SA). Formal education, though not significant, yielded a more positive attitude in all countries, except South Africa.

Table 44: Probit results, reporting marginal effects, for attitudinal question five: Do you have problems with wild animals at home?

Variable	Botswana (n=293)	Malawi (n=286)	Namibia (n=279)	South Africa (n=323)	Zambia (n=78)	Zimbabwe (n=222)
WS employed	-.227** (.097)	-.069 (.066)	-.032 (.100)	.025 (.093)	-.057 (.076)	-.388** (.173)
Age of the respondent	.002 (.002)	.0007 (.002)	-.007** (.003)	.010** (.003)	.009 (.012)	.0007 (.001)
Male respondent	-.041 (.042)	.030 (.040)	-.026 (.073)	.021 (.062)	.030 (.088)	.065 (.056)
No. of children	.013 (.013)	.017* (.009)	.024* (.014)	-.018 (.018)	.001 (.012)	.016 (.011)
No. of dependents	-.008** (.003)	-.003 (.004)	.002 (.005)	.008 (.011)	.008 (.008)	-.006 (.007)
No. of people in the household	-.001 (.006)	.005 (.015)	.008 (.005)	-.0009 (.015)	-.010 (.025)	.013 (.008)
No. of people in the household under 20 years old	.016 (.010)	-.002 (.017)	.003 (.009)	-.022 (.022)	.006 (.025)	.004 (.008)
Male household head	.078* (.045)	.035 (.051)	.093 (.074)	.060 (.062)	.019 (.077)	-.055 (.034)
Age of the household head	-.0003 (.001)	-.003* (.001)	.002 (.002)	-.002 (.002)	-.010 (.011)	-.002 (.001)
No. of years formally educated	-.0006 (.006)	-.0003 (.004)	-.037*** (.009)	.012 (.010)	-.007 (.009)	.003 (.006)
Currently formally employed	-.038 (.078)	-.072 (.112)	.030 (.093)	-.054 (.111)	.023 (.103)	-.205 (.231)
No. of household income sources	-.093** (.031)	.032 (.025)	.167** (.048)	.018 (.039)	-0.41 (.027)	-.015 (.026)
Log of monthly household Income	-.002 (.016)	-.009 (.012)	-.038 (.031)	.083* (.060)	-.020 (.019)	.004 (.018)
Family employed in tourism/conservation	.026 (.032)	NI	-.007 (.069)	-.102* (.060)	-.038 (.047)	.008 (.034)
Respondent felt that conservation was important	-.060 (.051)	-.030 (.035)	-.348 (.168)	-.214 (.183)	.008 (.108)	Predicts success perfectly
Pseudo R^2	0.2719	0.1387	0.1365	0.0670	-0.0594	0.2722
Prob > Chi Squared	0.0000***	0.0746*	0.0000***	0.0164**	0.7627	0.0000***

The figures in parentheses are standard errors. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

People employed by WS (except in South Africa) or with family employed in tourism/conservation (except in Botswana and Zimbabwe) reported fewer wildlife-based problems. Respondents who felt conservation was important were also less likely to express having problems with wild animals (except in Zambia).

Social views of HWC vary across the region. Despite there being a few significant variables, what seems to typify people who are less concerned with HWC was that they tended to be better educated, have more income sources, have jobs with WS, feel that conservation is important or have family employed in tourism or conservation.

Being employed by WS was most significant for the '*create jobs*' and '*reduce poverty*' questions, i.e. the questions related to tourism, emphasizing that those directly benefitting from tourism are likely to be more positive towards tourism and conservation.

Overall, in a separate analysis with no other variables included, those who thought that conservation was important had, on average, a higher mean number of years of education (M=6.89, SE=.104) than those who thought that conservation was not important (M=2.55, SE=.304). This difference was statistically significant ($F(1) = 111.159$, $p<0.05$).

6.3.1. AGGREGATED STAFF SAMPLE

Population density, number of years the ecotourism camp had been operating and a country dummy were included in the aggregated analyses. The '*family employed in tourism/conservation*' variable was excluded from the staff Probit models as it was not included in the Malawi staff interview schedules. Table 45 illustrates the Probit model results, reporting marginal effects.

Table 45: Probit results, reporting marginal effects, for the staff sample only

Variable	Attitude Two – Tourism *creates jobs* (n=317)	Attitude Three – Tourism *reduces poverty* (n=320)	Attitude Five – *Problems with wild animals* (n=331)
No. of years since tourism camp been operating	.010 (.017)	.012 (.015)	.029* (.015)
Population density	-.005 (.013)	.003 (.020)	.048* (.028)
Age	-.001 (.002)	-.004 (.003)	-.004 (.004)
Male respondent	.077 (.052)	.253** (.079)	-.097 (.074)
No. of children	.023* (.012)	.013 (.018)	.021 (.025)
No. of dependents	-.005 (.005)	.002 (.007)	-.010 (.009)
No. of people in the household	.007 (.011)	-.00009 (.014)	-.021 (.018)
No. in the household under 20 years old	-.016 (.013)	-.023 (.018)	.025 (.025)
Male household head	.105** (.059)	.032 (.064)	.178** (.078)
Age of the household head	.001 (.001)	.005** (.002)	.001 (.002)
No. of years of formal education	.015** (.005)	.010 (.008)	-.010 (.012)
No. of household income sources	-.039 (.025)	-.066* (.035)	.121** (.051)
Log of monthly household income	.028 (.031)	.073 (.044)	-.1353** (.049)
Respondent felt that conservation was important	.305 (.382)	.175 (.280)	Predicts success perfectly
Country 1:Botswana*	-.115 (1.02)	.168 (.489)	.696 (.252)
Country 2:Malawi*	.237 (.716)	-.643 (2.66)	-.999* (.0006)
Country 3:Namibia*	.008 (.544)	.220 (.239)	.567 (.203)
Country 5:Zambia*	Predicts success perfectly	.151 (.061)	.376** (.037)
Country 6:Zimbabwe*	-.314 (1.12)	.101 (.392)	.472 (.175)
Pseudo R^2	0.2448	0.2063	0.1825
Prob > Chi Squared	0.0000***	0.0000***	0.0000***

*The base country dummy is South Africa

The figures in parentheses are standard errors. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

For the staff sample, no consistent and significant determinant of attitudes was found. Trends observed in the analysis that are of interest are that males, younger staff, those with more formal education and those with higher household incomes tended to be more positive about tourism and have fewer problems with wild animals. Where population densities were higher and the tourism camp had been operational longer, staff tended to have more problems with wild animals.

Attitudes between countries were only significantly different in the '*problem animals'* question, where Malawian and Zambian staff on one hand, and South African staff on the other, differed in their attitudes.

6.3.2. AGGREGATED NON-STAFF SAMPLE

When the sample was aggregated across all non-staff respondents a number of variables appeared to impact significantly on attitudes. Distance from the community to the tourism operation was also included in the non-staff analysis. The results listed in Table 46 once again emphasise the importance of formal education, having family employed in tourism/conservation and an appreciation of conservation. Aggregation of the data appeared to increase the role of demographic factors driving respondents' attitude to ecotourism as a tool to reduce poverty.

Although not always significant, a trend emerging from the analysis is that older non-staff respondents, with more formal education, an appreciation of conservation, and higher monthly household incomes tended to be more positive about tourism and have fewer problems with wild animals. Older household heads, respondents with less education, fewer income sources and lower household incomes tended to be less positive about tourism. Having family employed in tourism/conservation resulted in significant positive attitudes towards tourism.

Table 46: Probit results, reporting marginal effects, for the non-staff sample only

Variable	Attitude Two – Tourism *creates Jobs* (n=1021)	Attitude Three – Tourism *reduces poverty* (n=921)	Attitude Five – *Problems with wild animals* (n=1155)
No. of years since tourism camp been operating	.001 (.007)	.023** (.008)	.004 (.004)
Population density	.005 (.019)	-.054** (.025)	-.014 (.012)
Distance	-.001 (.0009)	.0006 (.001)	-.0002 (.0007)
Age	.001 (.001)	.0007 (.001)	.001 (.001)
Male respondent	.001 (.027)	.011 (.035)	.038 (.024)
No. of children	.004 (.005)	.004 (.007)	.011* (.005)
No. of dependents	-.005** (.002)	-.00005 (.004)	6.11 (.002)
No. of people in the household	.006 (.004)	-.0009 (.004)	.003 (.004)
No. in the household under 20 years old	-.006 (.005)	-.002 (.006)	.015 (.025)
Male household head	-.030 (.027)	-.115** (.034)	.015 (.025)
Age of the household head	-.0008 (.001)	-.003** (.001)	-.001 (.0009)
No. of years of formal education	.010** (.003)	.013** (.005)	-.004 (.003)
Currently formally employed (non-tourism)	.024 (.040)	-.060 (.055)	-.011 (.035)
No. of household income sources	.012 (.017)	.014 (.022)	.006 (.015)
Log of monthly household income	.005 (.009)	.013 (.012)	-.001 (.010)
Family employed in tourism/conservation	.114*** (.025)	.178*** (.033)	-.024 (.024)
Respondent felt that conservation was important	.150** (.059)	.242*** (.073)	-.083 (.039)
Country 1:Botswana*	.086 (.591)	-.992** (.015)	-.447 (.773)
Country 2:Malawi*	-.941 (.542)	.998* (0011)	.622 (.371)
Country 3:Namibia*	.140 (.426)	-.979** (.028)	-.843 (.372)
Country 5:Zambia*	.092 (.247)	-.840** (.037)	.080 (.180)
Country 6:Zimbabwe*	-.026 (.597)	-.952** (.041)	-.114 (.449)
Pseudo R^2	0.2279	0.2210	0.2527
Prob > Chi Squared	0.0000***	0.0000***	0.0000***

*The base country dummy is South Africa
The figures in parentheses are standard errors. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

Those who appreciated conservation tended to say that tourism reduces poverty and creates jobs in their area and they had fewer problems with wild animals. Wildlife-based problems were more common in areas with lower population densities, closer to the conservation/ecotourism area, and where the tourism operation had been open longer. They were also more common if the respondent was older, female, had less education and lower

household income. Those respondents with more children tended to have more wildlife-based problems than those with fewer children. In Botswana, a number of older respondents interviewed said they were in favour of hunting as the community received meat from hunters while they themselves had, as yet, not received any direct benefits from ecotourism.

Attitudes were not significantly different between countries in terms of respondents' belief that tourism creates jobs for local people. In terms of respondents' opinion that tourism reduces poverty, however, there were differences between each country and South Africa; respondents in Malawi and Zambia were likely to have greater problems with wildlife than those in South Africa, though not significantly.

6.3.3. AGGREGATED FULL SAMPLE

A Probit model was also run with the full sample plus a country dummy variable to assess community members' attitudes across the southern African region. The country dummy was only significant in the '*problem animal'* question, where Malawi and Namibia were significantly different to South Africa. Formal education, having a family member employed in tourism/conservation, and whether or not the respondent felt conservation was important, were shown to be important factors impacting community members' attitudes. The longer the tourism camp had been operational the more positive respondents were about tourism reducing poverty in the area, though they also tended to have more problems with wild animals. A possible explanation for this could be that wildlife numbers have increased in the area as a result of ecotourism being the primary land use for longer.

Table 47: Probit results, reporting marginal effects, for the whole sample

Variable	Attitude Two – Tourism *creates jobs* (n=1279)	Attitude Three – Tourism *reduces poverty* (n=1168)	Attitude Five – *Problems with wild animals* (n=1415)
No. of years since tourism camp been operating	.004 (.005)	.019** (.006)	.009** (.004)
Population density	.008 (.010)	-.009 (.013)	-.019** (.009)
WS employed	.008 (.032)	-.048 (.044)	-.108** (.040)
Age	.002* (.001)	.00009 (.001)	.0001 (.001)
Male respondent	.001 (.023)	.033 (.030)	.009 (.025)
No. of children	.004 (.005)	.003 (.006)	.014** (.006)
No. of dependents	-.005** (.002)	-.0002 (.003)	-.0003 (.002)
No. of people in the household	.004 (.004)	-.001 (.004)	.003 (.003)
No. in the household under 20 years old	-.007 (.004)	-.005 (.006)	.002 (.005)
Male household head	.002 (.024)	-.069** (.029)	.038 (.026)
Age of the household head	-.0009 (.0009)	-.001 (.001)	-.00002 (.0009)
No. of years of formal education	.010** (.003)	.012** (.004)	-.003 (.003)
Currently formally employed (non-tourism)	.016 (.038)	-.075 (.054)	.005 (.038)
No. of household income sources	-.002 (.014)	-.007 (.019)	.031* (.016)
Log of monthly household income	.010 (.008)	.015 (.011)	-.025** (.010)
Family employed in tourism/conservation	.113*** (.021)	.154*** (.027)	-.016 (.023)
Respondent felt that conservation was important	.151** (.057)	.232*** (.069)	-.124** (.041)
Country 1:Botswana*	.204 (.169)	-.597 (.576)	-.718 (.348)
Country 2:Malawi*	-.974 (.052)	.293 (.468)	.609** (.199)
Country 3:Namibia*	.204 (.130)	-.649 (.531)	-.897** (.128)
Country 5:Zambia*	.136 (.037)	-.127 (.286)	.105 (.114)
Country 6:Zimbabwe*	.108 (.168)	-.447 (.458)	-.442 (.346)
Pseudo R^2	0.2029	0.1801	0.2082
Prob > Chi Squared	0.0000***	0.0000***	0.0000***

*The base country dummy is South Africa

The figures in parentheses are standard errors. ***, **, and * indicate significance at the 1%, 5% and 10% levels, respectively.

For the whole sample, older respondents with more formal education, higher household incomes and an appreciation of conservation were likely to be more positive about tourism and have fewer problems with wild animals. Those employed with WS tended to feel tourism

creates jobs for local people and had fewer problems with wild animals, but they were less positive than non-staff about tourism reducing poverty in the area. Whether or not the respondent felt conservation was important was statistically significant in all attitude questions, with those who felt that conservation was important being more likely to be positive about tourism and to have fewer problems with wild animals.

6.4. ANALYSIS OF OTHER STATISTICAL RESULTS

This section analyses results from other statistical analyses of community members' attitudes and includes more detail on the impact of HWC on attitudes.

6.4.1. SIZE OF THE COMMUNITY

As Table 48 shows, community size matters;[36] in general, the smaller the community or village surveyed, the more positive were attitudes towards conservation and tourism, despite respondents in smaller villages tending to have more problems with wild animals.

Table 48: Impact of the size of the community on attitudes

Tourism/conservation attitude	Response	Small community	Medium community	Large community
Positive change	Yes	68% (n=303)	43% (n=150)	39% (n=234)
	No	12% (n=58)	38% (n=134)	37% (n=222)
Create jobs	Yes	74% (n=337)	76% (n=266)	62% (n=366)
	No	11% (n=46)	14% (n=48)	23% (n=135)
Reduce poverty	Yes	68% (n=295)	67% (n=237)	38% (n=223)
	No	12% (n=74)	17% (n=60)	31% (n=183)
Conservation important	Yes	92% (n=380)	85% (n=298)	88% (n=520)
	No	4% (n=3)	11% (n=38)	8% (n=49)
Problem animals	Yes	85% (n=234)	84% (297)	71% (n=422)
	No	15% (n=138)	15% (n=54)	29% (n=171)

In a comparison of attitudes in small and large communities only, Table 49 shows that these differences were statistically significant.

[36] Community size was determined by the author by the number of households in the village, relative to other study area villages.

Table 49: Attitude differences between small and large communities

Tourism/conservation attitude	Sample size (n)	Community size	Statistical significance
Positive change	357	Small community	U = 54666, p < .001
	457	Large community	
Create jobs	378	Small community	U = 81198, p < .001
	501	Large community	
Reduce poverty	378	Small community	U = 51082, p < .001
	406	Large community	
Conservation important	414	Small community	U = 112192, p < .001
	569	Large community	
Problem animals	449	Small community	U = 115 646.5, p , .001
	594	Large community	

6.4.2. HUMAN-WILDLIFE CONFLICT

A consistent issue raised in all study communities was that of wild animals interfering with households' livelihoods and, in some cases, personal safety. One female respondent in Malawi told of a night she had been terrified inside her house with her children, while a bull elephant tried to push the house over to reach her maize stores inside. In Zambia, a female respondent had recently lost her husband who was killed by an elephant while riding his bicycle home one morning. Both of these examples highlight the real threat wildlife poses to rural households and their livelihoods.

Overall, 75% of the total respondents (n=1772) reported problems with wild animals at home. Elephants were the most frequently mentioned problem animal (55%), followed by lions (28%). Other animals mentioned included cheetah, hippo, leopard, hyaena, baboon and jackal. Some respondents in Mpukane community in South Africa mentioned francolin and other birds eating their vegetables, but all other communities tended to focus on the damage done by larger animals. There was no mention of problems with the spread of disease between wildlife and livestock.

Eighty-three percent of non-staff respondents reported problems with wild animals as did 67% of staff respondents. Table 50 shows the statistical significance of differences between staff and non-staff respondents in each country.

Table 50: Staff and non-staff sample differences in HWC by location

National group sampled	Sample size (n)	% who had problems with wild animals	Statistical significance	Country % who had problems with wild animals
Botswana staff	86	53%	$\chi^2(1) = 48.08$, $p<.001$	81%
Botswana non-staff	261	93%		
Malawi staff	74	85%	$\chi^2 (2) = 8.089$, $p<.05$	92%
Malawi non-staff	251	94%		
Namibia staff	`81	33%	$\chi^2(2) = 12.22$, $p<.05$	50%
Namibia non-staff	271	55%		
South Africa staff	61	71%	NOT SIGNIFICANT	63%
South Africa non-staff	329	61%		
Zambia staff	15	93%	NOT SIGNIFICANT	98%
Zambia non-staff	67	99%		
Zimbabwe staff	55	64%	$\chi^2(1) = 46.08$, $p<.001$	89%
Zimbabwe non-staff	221	96%		

HWC resulted in less positive attitudes towards ecotourism in the study areas. When asked if the ecotourism camps create jobs for local people, those who had problems with wild animals were less positive, with 71% saying they think ecotourism creates jobs. Seventy-eight percent of those who did not have problems with wild animals said that they thought that ecotourism created jobs for local people. This difference was statistically significant (χ^2 (2) = 23.982, $p<.001$).

For the whole sample, a statistical difference was also found [χ^2 (2) = 14.749, $p<.05$] between respondents who had problems with wild animals, and respondents' attitudes to tourism as an avenue to poverty reduction in the area. Of those who had not suffered HWC, 62% indicated a belief that tourism helped reduce poverty in the area, while 14% did not. Of those who reported problems with HWC, 58% felt tourism helped reduce poverty in the area, while 23% did not.

6.4.3. LAND OWNERSHIP SYSTEMS[37]

It was premised that variations in the ownership of land used for ecotourism could impact on attitudes. The land ownership types in this study included:

i) *Conservancy:* land managed by a representative management committee having a registered membership, legal constitution, outline of a benefit distribution plan and defined boundaries. In this study all conservancies were community-owned.

ii) *Community Trust:* a legal entity, commonly formed in a CBNRM programme, to represent the community, specifically in all agreements with the private sector.

[37] For a more detailed analysis of the impact of land management systems on attitudes see Snyman (2012b).

iii) Government Land: where the protected/conservation area is owned by the government. In this study, all such areas were National Parks.

iv) Government land with community levy: in this case the tourism camp was situated in a National Park (owned by the government), but the tourism operator paid voluntary community levies to the communities bordering the park (see Chapter Three, page 41, for more details).

v) Joint venture: in this study, a contractual partnership between a community or local institution and the private sector, to work together in establishing and operating a tourism enterprise.

Table 51 presents the study area examples in each land ownership type.

Table 51: Land ownership systems in the study areas

Land ownership type	Country	Study area example
Conservancy	Namibia	Palmwag Camp, Sesfontein and Anabeb conservancies
Community Trust	Botswana	Kwedi concession & OCT villages
	South Africa	Pafuri Camp & Makuleke community
Government Land	Malawi	Mvuu Camp, Mvuu Wilderness Lodge & villages adjacent to Liwonde National Park
	Zambia	Kalamu Lagoon Camp & Malama chiefdom villages
	Zimbabwe	Hwange camps & villages adjacent to Hwange National Park
Government Land with community levy	Namibia	Skeleton Coast Camp, Puros, Okondjombo, Sanitatas and Orupembe conservancies
Joint Venture	Namibia	Torra Conservancy, Damaraland Camp and Doro Nawas Camp
	South Africa	Rocktail Beach Camp & Mpukane Community

The results showed a difference in attitudes towards tourism and conservation between those who lived in an area where there was some form of community ownership and those who lived where there was no involvement. Table 52 illustrates attitudes for each land management system for all respondents and Table 53 shows tourism and conservation attitudes for staff and non-staff separately under different land ownership systems. These results suggest the importance of some form of community involvement in boosting positive attitudes towards tourism and conservation.

Table 52: Total sample: Impact of land management system on attitudes to tourism and conservation

Land management system	*Positive change*	*Create jobs*	*Reduce poverty*	*Conservation important*	*Problem animals*	*Family employed*	*Collect natural resources*	*Like to visit*
Conservancy	41% (n=80)	68% (n=97)	34% (n=68)	96% (n=124)	42% (n=128)	63% (n=125)	79% (n=128)	Missing
Community Trust	52% (n=503)	78% (n=558)	62% (n=480)	90% (n=602)	72% (n=617)	38% (n=614)	1% (n=369)	Missing
Government land	59% (n=616)	67% (n=632)	59% (n=618)	87% (n=656)	92% (n=683)	41% (n=604)	6% (n=683)	82% (n=672)
Government land with community levy	49% (n=79)	69% (n=96)	50% (n=85)	92% (n=117)	58% (n=123)	40% (n=122)	86% (n=123)	Missing
Joint venture	68% (n=186)	83% (n=198)	72% (n=184)	92% (n=208)	61% (n=221)	62% (n=219)	62% (n=217)	50% (n=120)

Not all respondents answered all attitude questions, so sample sizes differed between questions.
Missing: These questions were not included in the interview schedule for this country.

Probit regressions were run for three of the attitude questions (‘*positive change’, ‘create jobs’* and ‘*problem animals’*) using only land management systems as dummy independent variables, with government land as the base dummy variable. This was done to assess whether or not some level of community involvement impacted attitudes. In terms of tourism creating jobs for local people, respondents where there was some level of community involvement were all more positive than national park respondents (no community involvement). Similarly, national park respondents all tended to have more problems with wild animals than where there was some form of community involvement. In terms of tourism having a positive change in the area, community trust respondents were the only group who were less positive than national park respondents. This could be as a result of the majority of the community not seeing benefits from tourism in their area (to be discussed further in Chapter Seven). All other groups with community involvement were more positive than national park respondents about tourism resulting in a positive change in their area.

When other variables are added to the Probit models, community involvement still tended to result in more positive attitudes, but less significantly. On the whole, respondents in areas where government owns the land (national parks) were less positive than respondents living in areas under other ownership systems and also tended to have more problems with wild animals.

Table 53: Staff and non-staff sample: Impact of land management system on attitudes to tourism and conservation

Land management group sampled	% who felt there had been a *positive change* in the villages due to tourism	% who felt tourism *creates jobs* for local people	% who felt tourism *reduces poverty* in the area	% who have *family employed* in tourism/ conservation	% who *collect natural resources* from the conservation area	% who felt that *conservation was important*	% who had *problems with wild animals*	% who would like to *visit the park/conservation area*
Conservancy staff	83% (n=21)	96% (n=23)	70% (n=20)	78% (n=23)	13% (n=23)	96% (n=23)	22% (n=23)	Missing
Conservancy non-staff	32% (n=59)	62% (n=74)	27% (n=48)	59% (n=102)	93% (n=105)	96% (n=105)	47% (n=105)	Missing
Community Trust staff	82% (n=126)	92% (n=131)	82% (n=127)	44% (n=131)	2% (n=131)	99% (n=131)	59% (n=118)	Missing
Community Trust non-staff	44% (n=377)	75% (n=427)	57% (n=353)	37% (n=483)	1% (n=238)	87% (n=472)	75% (n=499)	44% (n=238)
Government Land staff	78% (n=135)	81% (n=143)	72% (n=138)	30% (n=70)	3% (n=144)	99% (n=143)	78% (n=144)	95% (n=142)
Government Land non-staff	55% (n=481)	63% (n=489)	56% (n=480)	43% (n=534)	7% (n=539)	84% (n=513)	95% (n=539)	79% (n=530)
Government Land with comm. levy staff	94% (n=17)	100% (n=17)	100% (n=17)	47% (n=17)	6% (n=17)	100% (n=17)	18% (n=17)	Missing
Government Land with comm. levy non-staff	42% (n=63)	64% (n=79)	42% (n=68)	39% (n=105)	99% (n=106)	91% (n=100)	64% (n=106)	Missing
Joint Venture staff	69% (n=63)	86% (n=69)	71% (n=67)	43% (n=70)	56% (n=70)	100% (n=70)	53% (n=70)	41% (n=70)
Joint Venture non-staff	68% (n=123)	82% (n=129)	73% (n=117)	71% (n=149)	64% (n=147)	88% (n=151)	64% (n=151)	54% (n=91)

Not all respondents answered all attitude questions, so sample sizes differed between questions.
Missing: These questions were not included in the interview schedule for this country.

Overall, the country attitude analyses in this chapter suggest a number of factors impacting attitudes with little consistency between countries, making it, therefore, difficult to predict the general direction and magnitude of the impact of various factors on attitudes. There are however exceptions to the general inconsistencies, with formal education, household employment in tourism or conservation and an appreciation of conservation shown to positively impact tourism and conservation attitudes at most study sites.

6.5. DISCUSSION OF THE MAIN FACTORS AFFECTING ATTITUDES TO ECOTOURISM AND CONSERVATION

This chapter has analysed the impact of various demographic and other socio-economic variables on the attitudes of ecotourism staff and non-staff in six southern African countries. In line with other studies (Allendorf et al., 2006; Simelane et al., 2006) it found these variables to have varying impacts on attitudes. In order to contextualise the remainder of the discussion section Table 54 summarises relevant past literature on attitude research.

Similarly to Waylen et al.'s (2009) study in Trinidad and numerous other studies (Alexander, 2000; Chandralal, 2010; Currie, 2001; de Boer & Baquete, 1998; Lepp, 2007; Mehta & Heinen, 2001; Mehta & Kellert, 2002; Sekhar, 2003 and Weladji et al., 2003) the present study found generally positive attitudes towards tourism and conservation throughout the communities studied. Waylen et al. (2009) hypothesised that this was perhaps due to the fact that the community in their study area was not large and although ecotourism did not involve every household in the village, it was likely that everyone was aware of the ecotourism operation and the actual or potential benefits for themselves, friends or family. The fact that smaller communities in this study were, in general, more positive than larger communities supports Waylen et al.'s (2009) hypothesis. The lack of alternative income-earning opportunities and close-knit structure of many rural communities results in the majority of community members being aware of ecotourism operations in their area and the possible benefits to be derived from the operation. When conducting the interviews for this study, the author frequently had non-staff respondents saying that the high-end ecotourism staff had "*nice houses*" and could afford to "*buy nice things.*" The perception in the communities noted by the author was that employment in ecotourism afforded one the opportunity to have an overall better standard of living than the average non-staff member.

Table 54: Summary of literature review on attitude research

Author/s	Year	Country	Comments/Results
Demographics			
Anthony Currie	2007 2001	South Africa South Africa	Younger respondents hold more positive attitudes towards tourism
Romañach et al.	2007	Kenya	Older respondents wanted hunting and mentioned the associated employment opportunities
DeMotts & Hoon Mehta & Kellert	2012 1998	Nepal Nepal	Women were less positive towards conservation
Mehta & Kellert	1998	Nepal	Age and education had no impact on attitudes
Ogra, as cited in deMotts & Hoon, 2012 Ogra & Badola, as cited in deMotts & Hoon, 2012	2008 2008		Female-headed households were often disproportionately affected by HWC.
Teye et al.	2002	Ghana	Surmised that a more positive attitude towards tourism by more educated people could be explained by the fact that much has been written in English regarding the benefits of tourism in both print and electronic media, therefore educated people would be more familiar or aware of the potential benefits than those with less education.
Groom & Harris De Boer & Baquete	2008 1998	Kenya Mozambique	No significant influence of education on attitudes
Andereck et al. Chidakel Mehta & Heinen Teye et al. Tessema et al. Larson Shibia Stem et al. Waylen et al.	2005 2011 2001 2002 2007 2010 2010 2003 2009	Arizona, USA Zambia Nepal Ghana Ethiopia Kenya Kenya Costa Rica Trinidad	Positive correlation between higher levels of education and positive attitudes toward conservation and ecotourism
de Boer & Baquete Groom & Harris	1998 2008	Mozambique Kenya	No significant influence of educational levels on attitude
Income & Wealth Factors			
Teye et al.	2002	Ghana	The higher the individual's income, the more negative his/her attitudes toward tourism
Mehta & Kellert Groom & Harris	1998 2008	Nepal Kenya	Wealthier households had more positive attitudes
López-Guzmán, Sánchez-Cañizares and Pavón	2011	Cape Verde	84% of their respondents felt tourism development would create employment and 90% believed it would generate wealth
Groom & Harris	2008	Kenya	Financial incentives from wildlife can improve community attitudes towards wildlife and conservation and the actual distribution of benefits is important in shaping attitudes.
Emptaz-Collomb	2009	Namibia	Even if tourism really provides benefits, people may not perceive it to be providing any benefits. It is important therefore, that if tourism is to be perceived positively by rural communities, it is essential that there is a link between benefits provided by tourism and the tourism itself.
Mehta & Heinen	2001	Nepal	Hypothesised that poor people, with few alternative income sources, possibly cannot adjust to the economic loss associated with wildlife damage

Human-wildlife conflict			
Kidehesho et al. Shibia Naughton-Treves & Treves Akama et al. de Boer & Baquete Baral & Heinen Newmark et al. Sifuna	2007 2012 2005 1995 1998 2007 1994 2010	Tanzania Kenya Uganda Kenya Mozambique Nepal Tanzania Kenya & Botswana	Respondents who incurred wildlife damage had more negative attitudes towards conservation relative to those who incurred fewer damages
Holmes Weladji et al.	2003 2003	Tanzania North Cameroon	No association between wildlife-related problems and attitudes towards conservation
Dickman Dublin & Hoare Romañach et al. Woodroffe, Thirgood & Rabinowitz	2010 2004 2007 2005a	General General Kenya General	Exaggeration of HWC based on the perceptions of residents, rather than the actual number of incidences
Operational time			
Cole	2008	Indonesia	Initially residents were enthusiastic about tourism and anticipated benefits but, overtime, expectations were reduced and optimism deflated
Land management systems			
Baral & Heinen Hill	2007 2004	Nepal General	Some form of ownership or control over conflict situations could enhance conservation attitudes
Weladji et al. Infield & Namara, as cited in Weladji et al. Romañach et al.	2003 2001 2007	North Cameroon Uganda Kenya	All found that where communities had some level of ownership, they had more positive attitudes toward conservation
Overall attitudes			
Waylen et al.	2009	Trinidad	Communities have overall positive attitudes towards tourism and conservation

There are a number of factors that cannot be controlled or manipulated, such as age and gender of the population, so it is important that policy is aimed at those factors that can, to some extent, be influenced, e.g. education levels and land ownership (i.e. level of community involvement in ecotourism).

In general, the communities studied regarded tourism as a source of employment. They also felt it would help reduce poverty, if not for the whole community then certainly for those employed in tourism, or otherwise impacted by it, for example suppliers of goods and services.

If tourism-related jobs were to disappear in an area (for example in the Zambian study area where tourism is one of few employers and as observed in Text Box 2 on page 25) it is unlikely that people would feel as positive about tourism and conservation in the future; this highlights the anticipation communities have about tourism and the potential risks for conservation associated with ecotourism camps closing.

Allendorf et al. (2007) stress that while little attention has been given to the non-economic benefits of conservation in developing countries studies indicate that people do value PAs for non-economic reasons, such as ecosystem services, benefits to future generations, and for the existence value of wildlife. The present study similarly found that although many respondents felt conservation was important because of the income to be derived from it through employment, tourism and hunting, many also stated that it was important for their children and future generations, as well as for the wood, thatch and food it provides.

The next sections discuss the results of this chapter in more detail; for comparisons with past literature see Table 54.

6.5.1. DEMOGRAPHIC VARIABLES

The selection of demographic variables for this analysis was based on factors highlighted in past studies as important determinants of attitudes, on the author's personal experiences and on factors that revealed themselves as important during the interviews.

Studies around the world have found considerable variation in the impact of demographic variables on attitudes towards tourism and conservation (Akyeampong, 2011; Allendorf et al., 2006; Baral & Heinen, 2007; Currie, 2001; de Boer & Baquete, 1998; Gadd, 2005;

Gillingham & Lee, 1999; Kideghesho et al., 2007; Larson, 2010; Mbaiwa & Stronza, 2011; Mehta & Heinen, 2001; Sarker & Røskaft, 2010; Sekhar, 2003; Shibia, 2010; Stem et al., 2003; Tessema et al., 2007; Teye et al., 2002; Weladji et al., 2003). Such variations were also noted in this study: it appears, therefore, that it is difficult to use demographic variables to predict attitudes. There are, however, some areas of commonality in terms of demographics that can be used as potential predictors.

The variables significantly influencing attitudes in some of the country analyses included: number of dependents, number of children, number in the household under 20 years old, gender of the respondent, gender of the household head, number in the household, and age of the respondent. These variables were not consistently significant in all countries, though where gender of the household head was significant there was always a negative relationship observed (except for South Africa's '*create jobs'* question) and the gender of the respondent was always positive.

When the data was aggregated for the non-staff sample, a number of demographic variables also became significant. Where significant, gender of the household head once again had a negative relationship and the gender of the respondent was positive. In terms of gender, it is often proposed that women are less positive towards conservation, because women spend a large amount of time collecting firewood, natural resources, guarding fields, etc., while men are away at work and, therefore, women encounter wild animals more often.

The number of children was significant in the '*problem animal*' attitude question for the non-staff and total aggregated samples, with a positive relationship. This could be due to the fact that respondents with more children perceived more problems with wild animals, as any conflict would negatively affect them, as they had more mouths to feed as well as children possibly being more at risk to personal threats from megafauna.

Other studies have largely found that younger respondents hold more positive attitudes towards tourism and conservation. This may be due to the young having more education than their elders, being less reliant on natural resources and therefore less affected by a lack of access to them, and/or having alternative livelihoods that reduce the risks they face. In this study, however, although not significant, the opposite was found. One argument could be that older generations have stronger positive conservation attitudes because they grew up in close

contact with natural resources and depended on them for survival (see for example Stem et al., 2003).

6.5.2. TOTAL MONTHLY HOUSEHOLD INCOME

Based on past studies, it was assumed that those with higher monthly household incomes would have more positive attitudes towards tourism and conservation. In this study, household income alone had, however, a limited significant impact on attitudes.

It is sometimes assumed that wealthier households will have more positive attitudes towards tourism and conservation as they have the 'luxury' of being able to either enjoy tourism and conservation and/or are not affected as much by the negative impacts of conservation, e.g. HWC, loss of access to natural resources, land, etc. This was, to a degree, confirmed in this study, but some past studies have had contradictory results (see Table 54). Overall in the aggregated samples however, though not always significant, those with higher monthly household incomes tended to be more positive about tourism and had fewer stated problems with wild animals.

The fact that in the present study, on average, people with lower household incomes were less supportive of conservation and tourism might be explained by Maslowian needs theory. This argues that an individual's basic needs are attended to first before higher needs such as supporting community, conservation or tourism initiatives (Doyal & Gough, 1991 and Maslow, 1970, as cited in Emptaz-Collomb, 2009). With this in mind, Emptaz-Collomb (2009) stresses that it would therefore be prudent for companies/individuals engaged in ecotourism to improve the public's access to good quality education, health, transport and communication. In the long run, this would create a more supportive environment for tourism and conservation projects and ensure their sustainability. Government, NGOs and the private sector can all play a role in this through infrastructural and other development projects.

In the present study, the results from the Torra Conservancy in Namibia, showed that respondents' attitudes were still (2009) influenced by a dividend payout in 2003 (see Snyman, 2012a). This was not a unique observation, being backed by Groom and Harris' (2008) Kenyan study which found that although financial incentives from wildlife can improve community attitudes towards wildlife and conservation, the actual distribution of benefits is more important in shaping attitudes.

The results looked at the role of income across a range of communities in six countries. Importantly, its significance as a determinant of attitudes has varied strongly. It is clearly an important incentive, but equally clear is that it is not the only one that matters to these communities.

6.5.3. FORMAL EDUCATION

The correlation between higher levels of education and positive attitudes toward conservation and ecotourism has been widely observed (see Table 54). In this study, for the total sample, the impact of formal education on attitudes to tourism and conservation was also found to be statistically significant in the tourism attitude questions, but not the '*problem animal*' question. One reason may be that HWC has little to do with whether or not one is educated, but those with more formal education had more positive attitudes towards tourism. Formal education had a positive impact on all tourism attitudes in the individual country analyses, except for the South African '*reduce poverty'* question.

6.5.4. EMPLOYMENT IN ECOTOURISM

It certainly appears that employment in ecotourism impacts positively on attitudes towards conservation and tourism. Statistical differences, with respect to all attitudes, were found between the attitudes of employees in ecotourism and those of non-staff respondents (Table 39). In all instances, ecotourism staff regarded ecotourism more positively. However, when other variables are added to the analysis employment in ecotourism becomes less significant (Tables 42 to 47).

In the country analyses, WS employment had varying impacts on attitudes. The same was found in the total sample analysis, where WS employment positively influenced the '*create jobs'* attitude, but negatively impacted the '*reduce poverty*' attitude. It is the author's opinion that this is because staff respondents felt that although their own lives had been positively impacted by tourism, it had not reduced overall poverty in the area. A few staff respondents mentioned to the author that there was a need to employ more people in tourism. In the total sample, WS employment significantly impacted attitudes towards '*problem animals,'* with staff tending to have fewer problems.

A priori (and as observed in the present study) people involved in tourism-related activities have a clearer perception of its socio-economic impacts and of conservation issues. In contrast, Emptaz-Collomb's (2009) Namibian study found that even if tourism really provides

benefits, people may not perceive it to be providing them. It appears, therefore, that it is important that if tourism is to be perceived positively by rural communities, they should see a link between the benefits it provides and the tourism itself. Sandbrook and Adams (2012) suggest that if perceived costs outweigh benefits, then no matter how benefits are distributed, there is unlikely to be sustainable widespread support for either conservation or ecotourism. However, it was observed in this study that the awareness of net benefits to others in the community effectively promotes positive attitudes towards conservation despite inequalities in distribution of tourism's benefits.

6.5.5. AGE OF ECOTOURISM OPERATION

Community expectations at the start of an ecotourism operation in a rural area are often high; there is hope that ecotourism will bring with it benefits. Attitudes to ecotourism operations at this stage are accordingly generally positive. It was hypothesised, based on experience, that as the age of the operation increased, attitudes would be less positive; over time expectations are not always met and communities may become disillusioned with the ecotourism operation. Such a tendency would be reinforced if negative impacts of ecotourism (discussed in Chapter Two) were to emerge.

For the ecotourism staff analysis, only the issue of '*problem animals'* was significantly impacted by the operational age of the ecotourism camp; as the operational time increased respondents were more likely to express having problems with wild animals.

In the total sample Probit models in Table 47, tourism operational age significantly impacted on all attitudes except for '*create jobs,*' suggesting a correlation between lodge age and attitudes. In these analyses, as the age of the operation increased, respondents tended to feel tourism reduced poverty, but also to have more problems with wild animals. In the non-staff analyses, the ecotourism operation's age was only significant in the '*reduce poverty*' question, where it was found that as the operational age increased, there was a greater likelihood of respondents saying that tourism helped to reduce poverty in the area. Overall in all aggregated samples, as the operational age increased respondents were likely to be more positive about tourism, but also to have more problems with wild animals (HWC).

This is important to note, because if, for some reason, tourism benefits do not continue to be adequately received by communities but costs of conservation (HWC) are still being felt, attitudes may deteriorate over time or conflicts may arise. Community members may also

start to associate problems with wild animals with tourism in the area, resulting from the conservation of the wildlife for tourism.

During informal discussions with non-staff respondents, it was apparent that initial enthusiasm about tourism and its anticipated benefits could decline; expectations were often not met and optimism became deflated (a similar problem was noted by Cole (2008) in his study in Indonesia). The management of expectations from the outset of an ecotourism operation appears, therefore, to be important for long-term success, as is the continued provision of tangible and intangible benefits to rural communities in the area and a mitigation of HWC.

6.5.6. HAVING A FAMILY MEMBER EMPLOYED IN ECOTOURISM AND/OR CONSERVATION

A priori if the interviewee or one of their family members is receiving direct, tangible benefits from tourism and/or conservation, one would expect them to be more positive towards it. This premise was supported by the results in this study. In fact, having family employed in tourism or conservation was one of the most significant variables across a number of the analyses. This suggests that it is not necessary for an individual personally to receive benefits in order to be aware of the benefits that can result from tourism and conservation.

For the total sample, having family employed in tourism and/or conservation was a statistically significant determinant of all attitudes, except those regarding '*problem animals*.' Where significant, those who had family employed in tourism and/or conservation were more positive towards tourism and conservation than those who did not.

Tables 42 to 44 (pages 134 to 136) show that when the analysis is broken down by country family employment in tourism or conservation had varying impacts, but was most significant in South Africa. Having family employed was particularly significant in the non-staff respondent analysis of tourism attitudes, most likely because it allowed non-staff still to benefit from tourism or conservation indirectly.

6.5.7. HUMAN-WILDLIFE CONFLICT

As discussed, communities living in or adjacent to PAs frequently incur direct costs associated with living next to wildlife; damage to crops, loss of livestock and occasionally, loss of human life. Other costs associated with wildlife include the additional direct cost of

guarding crops and livestock by paying someone to look after them or the opportunity cost of protecting it by giving up one's time which could have been put to a more productive use. This often results in a disruption to children's schooling as they are kept out of school to guard household fields, a problem observed by the author. Logic implies that those negatively impacted by wildlife are likely to have less positive attitudes towards conservation and consequently ecotourism.

Hill (2004) argues that people who believe they do not have control over a conflict situation are more likely to inflate their perceptions of risk, and Dublin and Hoare (2004, p. 274) emphasise that it is often the *potential* for suffering large losses, especially at harvest time rather than actual losses that is the major factor influencing rural communities' attitudes. This could explain the high incidence of HWC expressed in the interviews in the present study. The close-knit community life of many rural African villages could also result in an exaggeration of HWC based on the perceptions of residents, rather than the actual number of incidences. There can frequently be a mismatch between perceptions of risk and the actual degree of risk. This was observed during the interviews when respondents recalled incidences of lions killing cattle or hippo destroying crops from many years ago; they still, however, perceived these risks as current.

Woodroffe et al. (2005b) found that high individual costs caused by elephant damage to crops, property and, in some cases, human life, can lead to a perception of more problems with wild animals than may actually be occurring (see Kahneman & Tversky, 1979). Catastrophic events such as an elephant destroying one's crops appear to shape perceptions more than frequent, small-scale losses to pests, even though these losses may have a higher cumulative economic impact (Naughton-Treves & Treves, 2005). Domestic animals, such as cattle and goats, may also cause more damage than wild animals but because communities often resent wild animals, as they often see them as belonging to the State and as something over which they have no control, they perceive them as causing more damage and being more of a problem. This idea is supported by the observation that HWC was identified as a less serious problem under the Namibian conservancy approach, where land is community-owned, than it was in the Malawi, Zambia and Zimbabwe study areas.

In general, respondents who reported problems with wild animals were found to have less positive attitudes towards tourism and conservation. Walpole & Thouless (2005, p. 130) stress that tourism will only improve tolerance towards wildlife where the benefits of tourism

actually reach the people bearing the costs of wildlife, and where local communities understand the linkages between tourism benefits and wildlife conservation. Negative community attitudes resulting from HWC can be detrimental to the long-term success of conservation and ecotourism as land uses; sustainability may therefore require attempts to mitigate HWC in rural areas. The various methods available are discussed in more detail in Chapter Seven and Appendix K.

6.5.8. LAND OWNERSHIP SYSTEMS

The main land ownership systems in this thesis were state property, communal property and private property (mainly partnerships in the form of joint ventures). Overall, the greater the involvement of the community in the tourism operation (e.g. joint ventures), the more chances there are for linkages to be established between the community and the tourism operation. Partnerships between the private sector and rural communities also allow for a transfer of knowledge, skills and, in some cases, capital (see Snyman, 2012a). The results of this study show that tourism and land management arrangements that give communities some level of ownership or empowerment, as well as allowing them to be involved in the decision-making and benefit distribution process, may result in improved attitudes and, consequently, long-term support.

In line with the present study, a number of past studies (see Table 54) found impacts of land ownership on attitudes, though Romañach et al. (2007) stress that land ownership alone is not sufficient to promote wildlife conservation or positive attitudes towards ecotourism operations. The highest percentages of both staff and non-staff respondents who would like to visit the PA also came from respondents living adjacent to government land. While the historical exclusion of these communities from PAs could be one reason for this high percentage, it does illustrate the possible benefit that could flow from community outreach projects that include structured/controlled access for communities to PAs.

In terms of policy, it is important to note that the areas reporting the highest incidence of HWC among both staff and non-staff respondents were adjacent to state-owned land (in this study all national parks) and where there was no community involvement. This points to a need for government PAs and national parks to invest time and/or money in HWC mitigation efforts if they are to ensure the long-term support of communities in the area.

6.6. CONCLUSIONS AND POLICY IMPLICATIONS

Ecotourism employment (either directly or of a family member) certainly had an impact on attitudes and resulted in more positive attitudes, though not always significantly. It is frequently the vulnerability of poorer households, and the risk faced by these households, that leads to less positive attitudes towards tourism and conservation. As discussed earlier in the chapter, the costs communities have to bear from living adjacent to wildlife and/or as a result of the opportunity costs associated with conservation areas are often high. If there are no concomitant benefits associated with these costs, then it is unsurprising if households hold negative attitudes towards conservation and the associated tourism operations in an area.

Education as a determinant of employment opportunities, and of positive attitudes, emerged as an important determinant of the sustainability of tourism as a land use. Together with formal education, awareness and education campaigns in communities can also improve public knowledge and awareness of conservation and tourism. This understanding may, in turn, result in a greater willingness to accept the costs of living with wildlife, and more positive attitudes towards conservation and tourism in the area.

Overall, one clear point emerging from the analyses in this chapter is, therefore, the importance of formal education as a generator of positive attitudes towards conservation and tourism, and therefore, to the long-term sustainability of PAs. Overall, in terms of policy, the analyses illustrate that ecotourism operators wanting community support and acceptance should support education, offer direct and indirect employment opportunities and promote livelihood diversification.

The study clearly shows that conservation attitudes may also be influenced by costs and benefits that accrue to others, including those in different households. This would explain why some households, who are not directly affected by tourism or conservation, still hold positive attitudes towards it (Snyman, forthcoming (a)).

The results of this chapter highlight the diverse array of factors affecting people's attitudes towards ecotourism and conservation. It was shown that monetary benefits from ecotourism alone will not serve to improve local people's attitudes towards ecotourism and conservation, as there are a number of other factors shaping attitudes. These include tangible, as well as intangible benefits, demographic factors, the local economic situation, past beliefs, cultural

beliefs, land ownership systems, population density, how long tourism has been in the area, and the diversity of livelihood strategies available to local people in the area.

Ideally, as discussed in Chapter Five, ecotourism should be part of a diverse livelihood portfolio. Hulme & Murphree (2001) argue that conservation, for most rural African households, is an investment for present and future value, with the main goal being the maintenance or enhancement of their livelihoods. Ecotourism can help monetize this asset. Community access to the natural resources of the area where an ecotourism camp operates can also enhance livelihoods. Communities who are excluded from the conservation area will require further incentives to conserve natural resources, as they will not directly be benefitting from their conservation. The more global benefits to be derived from ecosystem services are also important and communities can play a role in this through watershed protection, preventing deforestation, etc. (Snyman, forthcoming(a)).

The generally more positive attitudes of ecotourism staff suggest that the receipt of benefits from tourism does indeed instil more favourable attitudes. Positive attitudes do not however necessarily suggest that behaviours will also promote conservation and tourism. Poor rural households face many economic and time constraints that can prevent them from supporting conservation. Parry and Campbell (1992, as cited in Emptaz-Collomb, 2009, p. 101) suggest that improving the living conditions and social welfare of rural people is therefore an important part of any conservation strategy. It was observed that ecotourism can play an important role here, through donations towards community development and social welfare projects, tourism-related infrastructure developments, directly through wages and salaries and indirectly as suppliers of goods and services.

The fact that perceptions of HWC were highest amongst those staff and non-staff respondents associated with a government-owned conservation area with no community involvement highlights the importance of land tenure, ownership and empowerment. The land management system with the least community involvement (government-owned land) also had, overall, the least positive attitudes towards tourism and conservation. Non-staff respondents with the most positive attitudes were associated with joint ventures whereas staff members with the most positive attitudes were associated with government land where the private sector ecotourism operator paid voluntary community levies to the communities (Namibian conservancies in this case) in the area. This could result from these staff members

knowing that although there was no contractual obligation on behalf of the tourism operator, communities were still paid.

In summation, some management conclusions drawn from this research include (adapted from Snyman, 2012b):

- Land ownership arrangements do impact attitudes, but not always significantly. Some level of ownership/empowerment is however important to the long-term maintenance of positive attitudes and the sustainability of the ecotourism operations. An example of a successful joint venture between the private sector and a community is that of Damaraland Camp and the Torra Conservancy in Namibia (see Snyman (2012a)). The JV has recently been the first case of a conservancy raising their own capital funding for the expansion of an existing operation, serving to empower the community further and enhance their business skills;
- Capacity building and empowerment, through employment and ownership, have been shown to lead to more positive attitudes towards conservation and ecotourism and therefore sustainability (Snyman, 2012a). Communities should, therefore, be involved in decision-making processes and benefit-sharing relating to ecotourism and conservation in their areas;
- In areas where government own the land (in this study, national parks) and where there is no community involvement, there need to be benefits, both tangible and intangible, received by the community as well as a mitigation of the negative impacts associated with conservation (HWC). Outreach programmes, introduced by the private sector tourism operator, NGOs or government, in communities abutting the Park could include educational programmes as well as social welfare projects. Such programmes would serve to link conservation and tourism directly to benefits;
- The inclusion of the community does not have to be directly in the tourism business; it can be through including cultural activities and local culture in the tourism operation. This can empower community members through the expression of their culture, the sale of local crafts as well as payments for various cultural activities, such as dancing and singing. It is, however, important that culture is not commodified and that there is mutual respect between tourists and local people;
- Overall awareness-raising is important, including that specifically related to ecotourism and conservation. This can be done by government, NGOs or the private sector. Ecotourism operators can play an important role in this through environmental talks and conservation and tourism awareness-raising days in communities, as well as by offering

environmental lessons and game drives to community school children, as many have never been into the PA adjacent to their homes. Numerous NGOs, such as Elephants without Borders in Botswana and IRDNC in Namibia, give talks in rural villages to raise awareness of conservation issues;

- There must be a clear, structured process of setting and managing expectations prior to an ecotourism operator starting in an area, as well as through the operational phases (to be discussed further in Chapter Seven);
- Overall, it is not only important to maximise the benefits of conservation to communities, there needs to be a concomitant process of minimising its costs; there are generally more who bear the costs than there are who enjoy the benefits of conservation and ecotourism in an area (discussed further in Chapter Seven and Appendix K);
- The continuation of regular benefit distribution throughout the operation of ecotourism camps is important for long-term support. This distribution needs to be seen to be happening by the majority of the community, not only those in leadership (as observed in the Okavango Community Trust villages, see Snyman, forthcoming (b));
- Formal education is important and has been shown to influence attitudes positively. Improved educational infrastructure and improved access to education should therefore be a priority in rural areas (e.g. scholarships, building of schools);
- Alternative livelihoods (such as ecotourism employment) may assist in steering households away from absolute reliance/dependence on natural resources for survival, which could in turn promote biodiversity conservation and its long-term sustainable use, as well as positive attitudes;
- As discussed in Chapter Five, the use of local suppliers of goods and services by a tourism operator serves to extend tourism's benefits beyond employment or ownership (for example Pafuri Camp in South Africa outsourced staff transport to community members, as well as selling community crafts in the shop and buying eggs from the community; Damaraland Camp in Namibia outsources laundry services and road maintenance to local community members).

Future research should consider the differences in attitudes between the unemployed and those who have jobs of any sort (not necessarily tourism); is it ecotourism employment causing differences in attitudes, or merely employment? Employment of any kind diversifies livelihoods for a household and reduces the risks it faces, potentially improving attitudes towards tourism and conservation in general. The analysis in this chapter did not however find other formal employment to impact on attitudes in a statistically significant way (except

for a negative response in Botswana in the *'reduce poverty'* question). As already highlighted, it is important to note that ecotourism is one of few formal employment opportunities suited to these remote, rural areas.

An understanding and management of community members' attitudes, expectations and perceptions under varying socio-economic circumstances is likely to lead to more efficient, equitable and sustainable community-based conservation and tourism models. In order to ensure long-term sustainability, it is important that ecotourism operators are aware of the factors directly affecting local opinions and behaviours. Positive community attitudes towards PAs and natural resources will assist in ensuring that ecotourism remains a viable, sustainable land use. A focus on formal education, capacity building and increasing local linkages from tourism operations may go a long way towards improving local community members' attitudes to conservation and tourism (Snyman, forthcoming (a)).

CHAPTER SEVEN - BEST PRACTICE FOR PRIVATE SECTOR ECOTOURISM ENGAGEMENT WITH RURAL COMMUNITIES

This thesis has explored the different patterns and qualities of relationships between communities and high-end ecotourism camps in conservation areas. In order to get a sufficiently broad spread of community/ecotourism relationships the sample was drawn from eight different communities and spread over six countries. It became clear that there were major variations in the quality of relationships with local communities even though all ecotourism camps included in the study were operated and marketed by the same company with the same philosophy. This chapter summarises the determinants of these variations.

7.1. INTRODUCTION

It has been shown that important to the long-term success of conservation as a land use in Africa are ecotourism models resulting in local community members receiving (and seeing themselves receiving) real benefits at least equalling the costs they have to bear from conservation. If there is to be sustained economic growth that does not require constant private sector, government and/or NGO support, the empowerment and capacity building of community members needs to go hand in hand with economic growth. Reliable local government and community institutions providing support are also important for long-term conservation and ecotourism success.

One outcome of this study was the observation that there are numerous regional and local differences between communities, as well as in their relationships with conservation areas and tourism operations in southern Africa. These differences, affected by history, culture, natural resources, education, politics, etc., impact the relationship between ecotourism and communities. All but one of the study areas in this thesis were remote, leaving residents few, if any, alternative employment opportunities. The Pafuri/Makuleke study area where there were employment opportunities in mining, commercial agriculture and government was the exception. It is worth remembering Ashley's (2000) observation that in areas where there are few training opportunities, a lack of alternative off-farm industries, remoteness and a lack of infrastructure, small benefits from tourism can be significant.

Ashley (2000) also emphasised that matching the design of tourism operations to local livelihoods requires a thorough understanding of people's livelihood strategies, needs and alternatives. This thesis has attempted to provide such insights and to give a greater

understanding of local communities' livelihood strategies, household incomes, spending patterns, factors affecting their attitudes and general demographic attributes.

In studying high-end ecotourism in southern Africa the author has seen much that works well and also much that could be improved. In this chapter the worthwhile efforts that have been made and that any newcomer should endeavour to follow will be summarised, but examples of points of failure and weakness, and the problems to which these led will also be presented. Suggestions for strategies to avoid such problems will then be given.

7.2. PRIVATE SECTOR ECOTOURISM AS A TOOL FOR LOCAL ECONOMIC DEVELOPMENT

Throughout this study it was observed that private sector ecotourism in remote, rural areas of Africa can promote local socio-economic development. It is certainly not a panacea and benefits can be enhanced when accompanied by other measures such as upliftment and education projects. It was also observed during this research (and earlier noted by Adams & Infield, 2004) that income generated from tourism can lead to a dynamic of competition of its own, as different stakeholders attempt to dominate access to the available revenue streams. The private sector operator wants to maximise profits, as would the community and any related government departments; 'best practice' involves maximising the benefits of all involved, or at least satisficing.

The next section summarises potential benefits to be derived from private sector ecotourism; the ways in which these benefits can be maximised are then discussed.

7.2.1. EMPLOYMENT OPPORTUNITIES

Employment in ecotourism is one of its most important contributions to local socio-economic development. As shown in Chapter Five, the direct benefit of wages and salaries to household welfare goes beyond their contribution to incomes; it allows investment in productive assets and gives ecotourism staff future security as well as the opportunity to diversify their livelihoods.

Over and above the direct benefit of wages, ecotourism employment gives people the opportunity to develop new skills through training, allowing them to assume more control over their own development and to feel more confident in their abilities. This empowered some to initiate development or business projects for themselves, their households and their

communities. This was observed in the Malawi study area, where local staff at Mvuu Camp raised funds and initiated the building of a school in their home village adjacent to the Park. Such outcomes are not unique (see for example Stronza's (2007) findings in Peru).

The dependency ratio determined in Chapter Five (section 5.4. on page 71) illustrated the conduit through which wages earned by a worker translate into welfare impacts for others in remote, rural areas; on average, across the six countries each staff member was supporting seven people.

Employment opportunities are however limited by the size of the operation and their impacts are affected by the number of different households employed. Having a number of staff members from the same family (observed in Namibia, South Africa and Botswana) narrows employment benefits, and it would be useful to ensure hiring practices extend employment across as many households as possible.

It was also illustrated in the preceding chapters that tourism has the ability to employ unskilled labour (no previous permanent employment) as well as a high proportion of women. This creates job opportunities for previously excluded people and is important in terms of equitable socio-economic development in remote areas ('inclusive growth').

Indirect employment may also be important. It results from camps using local suppliers of goods and services, camp staff attending schools and clinics in the area, camp staff spending their wages at local stores in the villages, etc. (see the case study Text Boxes 4 and 5 on page 98).

7.2.2. SKILLS TRAINING, DEVELOPMENT AND CAPACITY BUILDING

This thesis has shown that ecotourism has been a 'first job' for many workers. This provides them with, a) skills training and development and b) an employment history which improves their chances of getting work elsewhere if they have to leave. Skills training and development from ecotourism employment or through private sector/community business partnerships can build capacity in communities (see Figure 17). As an example, in the Malawi study area a local farmer sold fresh produce to the tourism camp so successfully that he had to expand his business and outsource to other local farmers to meet the demand. This resulted in local economic development and in capacity building.

Figure 17: Local Makuleke community member trained as a chef: Pafuri Camp, South Africa

Photo: Susan Snyman, 2010

7.2.3. LEASE FEES

The private sector's payment of lease fees for operating in community areas can contribute substantially to local economic development. If lease fees are paid to a government/national institution they can benefit local communities through the investment of this income in infrastructure and development projects in the area, e.g. building of schools or clinics. The same applies if lease fees are paid to a communal institution that could choose either to invest in a communal project, such as a school or borehole, or pay out individual/household dividends which would directly impact on household income. The Torra Conservancy in Namibia has successfully made use of both individual and communal benefit distribution (see Snyman, 2012b). Institutions do, however, need to be transparent and accountable for benefits to be equitably distributed in the community. The actual impact of lease fee payments is beyond the scope of this thesis, but the importance of connecting tourism benefits with the conservation area was observed. During discussions in the villages in the panhandle of the Okavango Delta in Botswana, many respondents mentioned that they were unaware of the lease fees paid by WS to the Community Trust representing them (see Snyman, forthcoming(b)). In such a case, the link between ecotourism benefits and conservation was broken and led to misplaced discontent with the private sector partner.

7.2.4. JOINT VENTURES AND OTHER PARTNERSHIPS

As highlighted in Chapters Five and Six, JVs between the private sector and local communities can promote local socio-economic development through profit-sharing, employment, skills training and development, as well as through the empowerment of local communities to engage in business and acquire new skills (see Snyman (2012a and Figure 18). It was observed that the management of expectations and regular communication between stakeholders is important to the success of a JV. JVs bring together the community and its natural resources, and the private sector and its business acumen, to form a partnership which can be mutually beneficial. Like Kepe et al. (2005), this research did however also find potential problems with JVs; these included divergent agendas of different parties, unclear roles and responsibilities of stakeholders, a lack of transparency and accountability, insufficient communication between stakeholders, unequal power distribution and lack of capacity in communities.

Figure 18: Joint venture partnership between the Torra Conservancy & Wilderness Safaris: Damaraland Camp, Namibia

Photo: Susan Snyman, 2009

7.2.5. LOCAL LINKAGES/VALUE CHAINS: SUPPLIERS OF GOODS AND SERVICES

Tourism has the potential to offer numerous local linkages that can extend its impact beyond direct employment. The camps surveyed reported using local carpenters, builders, thatchers, etc., during construction and renovation of camps, but there is a need to spread benefits further. Some camp managers that buy locally reported problems with the quantities and quality of goods available. It follows that an important part of the process is to ascertain the skills and goods available in local communities and to develop local linkages based on these. A common obstacle to broadening linkages around ecotourism operations is the inadequacy of skills, leaving communities unable to provide the required goods and services, unaware about tourist demands and therefore the types of goods and services to provide. This problem has been widely discussed (see for example Ogutu (2002); Epler Wood International (2004); Rogerson (2006)) and Mitchell and Ashley (2010) stress the need for a multi-faceted approach to promote and increase linkages.

In this study, the most extensive local linkages were observed in Namibia and South Africa. A likely reason is that the local economies in these countries are comparatively well developed. The proportion of goods sourced locally in other, more remote study sites was generally lower. Local suppliers confront economies of scale; WS found it more efficient, reliable and cost effective to buy bulk inputs in major centres and then distribute them to remote camps.

NGOs and local governments can play an important role in training and capacity building to ensure the level of delivery and content meet the ecotourism operators' requirements. The benefits need not be unidirectional; ecotourism operators can benefit from local linkages through reduced transport costs, improved supply logistics and fresher produce in the case of foodstuffs. They can also improve relations with community neighbours as greater benefits from ecotourism are received.

7.2.6. INFRASTRUCTURE DEVELOPMENT

In 2009/2010 unexpectedly high flood waters in the Okavango Delta in Botswana isolated residents in the Savuti area from the outside world. Local residents were unable to get their products to local markets and had limited access to clinics and schools. The situation was changed by ecotourism; the local lodge operator constructed a bridge over the Savuti Channel at a cost of BWP200 000 (approx. USD30 000), giving villagers access to markets and healthcare.

Such infrastructural developments can have a profound impact in remote rural areas. They can be provided directly by the ecotourism operator, developed or upgraded by government specifically for ecotourism, or can result from donations made by guests to philanthropic projects (discussed later in this chapter). Infrastructure developments, such as power, roads and communication can have a powerful influence on people's mobility and the choices available to them, allowing them to diversify their livelihoods and reduce the risks they face. The importance of this was highlighted in Chapter Five.

The lodges surveyed were involved in both community and conservation infrastructure developments. These included the development and maintenance of roads (mentioned by numerous respondents in the Malawi study area as a benefit of tourism improving their access to markets), provision of boreholes and water pumps, fitting of tracking collars on endangered species and those species most involved in HWC, building of schools and libraries and fencing for vegetable gardens. During the 2011-2012 financial period WS invested or managed investments in infrastructure for public benefit across all regions to the value of more than BWP2.6 million (approx. USD390 390) (Wilderness Holdings, 2012).

7.2.7. LOCAL EMPOWERMENT

It has been observed by the author that for the long-term success of ecotourism and conservation it is important that communities are empowered through them. This requires both business education and participation in decision-making processes. Ecotourism employment empowers local individuals by giving them the security of a permanent household income source and, frequently, new skills. Personal and community empowerment can also result from JV agreements, business partnerships, the support of local entrepreneurs, and exposure to other cultures. These factors have been emphasised in Chapters Four, Five, Six and in Snyman and Spenceley (2012).

7.2.8. PHILANTHROPY/DONATIONS

As a company with a high percentage of the high-end ecotourism market in southern Africa, WS funded and/or administered more than BWP3.3 million (approx. USD500 000) in community development projects between March 2011 and February 2012. This was over and above the employment offered in remote rural areas (approx. 2 000 community employees across southern Africa). These donations positively impacted the lives of approximately 21 000 people living in or adjacent to PAs (Wilderness Holdings, 2012). Ecotourism can also, therefore, contribute to local socio-economic development through

philanthropic donations either from the ecotourism operator themselves or from guests who visit their operation. Donations to schools (see Figure 19), clinics, health services, and various other development projects can enhance social welfare and improve local socio-economic conditions for communities.

Figure 19: Philanthropy: School built in Puros, Namibia as a result of tourism in the area

Photo: Susan Snyman, 2009

The above points, as well as the results from Chapters Five and Six, have shown ecotourism's important role in local socio-economic development, increasing incomes and reducing local poverty in remote, rural areas; it is, however, not a panacea. At this stage, it is important to review the role of major ecotourism stakeholders.

7.3. ROLE OF MAJOR STAKEHOLDERS

There are numerous different stakeholders participating in ecotourism including private sector, NGOs, government, local communities, support institutions, universities and researchers. Their differing roles depend on the particular form of ecotourism and the level of participation required.

As shown in Chapter Six and supported by Walpole & Goodwin (2000), co-operation and the involvement of all stakeholders from the beginning of an ecotourism development and

throughout the operation and management of it is important to its long-term success. This includes an agreed vision, strategy and objectives relating to ecotourism in the area, including achievable environmental, social and economic objectives. Much of the success enjoyed by the Torra Conservancy and the Mpukane Community partnerships has been as a result of ongoing communication, joint decision-making and mutually agreed upon strategies and goals. On the other hand, recent tensions (2012) between WS and the OCT in Botswana resulted largely from a lack of regular communication between stakeholders; this could have been avoided by clear strategies and clear, transparent communication between the partners.

In terms of stakeholder participation, there are numerous difficulties associated with balancing all stakeholders' expectations to achieve a project that is socially and environmentally balanced, and also produces a profit (economically sustainable). Such difficulties are bound to lead to tensions that provoke conflicts between stakeholders. It was observed that the management of these tensions is important for the long-term success of an ecotourism project, and the time and effort required for this must be factored in to all projects.

Table 55 summarises various interactions observed between three of the main stakeholders engaging in a private sector ecotourism operation (adapted from Currie, 2001).

Table 55: Role of major stakeholders

	CONSERVATION	**TOURISM**	**COMMUNITY MEMBERS**
CONSERVATION (Often National Parks/Government, but can also be communal)		Ensure good wildlife-viewing Ensure natural habitats for tourism Provide necessary infrastructure such as roads, etc. Provide anti-poaching measures to increase wildlife numbers	Mitigate human-wildlife conflict Allow for sustainable natural resource utilisation Provide community environmental education Involve local community members in decision-making that affects their lives
TOURISM	Sustainable development which minimizes negative environmental impacts Provide revenues for resource protection Raise and manage funds for conservation projects Maintain areas as conservation, rather than other land uses		Equitably share of individual and colective tourism revenues Involve community members in tourism, through employment, partnerships and supply chains Ensure tourist respect for local cultures Broaden benefit-sharing options
COMMUNITY MEMBERS	Participate in anti-poaching Adhere to resource use restrictions Promote and support conservation in the area	Involvement in tourism through employment, village visits, supply chain and partnerships Welcome tourists and ensure their safety Integrate culture into tourism	

Following on from Table 55 the three major stakeholders and their particular roles in ecotourism development will now be discussed in more detail.

7.3.1. PRIVATE SECTOR[38]

The bulk of this thesis has shown that the private sector (here in the form of ecotourism) has an important role to play in terms of local socio-economic development and poverty reduction in rural areas. The private sector has capital available for the development of new tourism ventures, as well as marketing capabilities, greater advertising opportunities, economies of scale and financial management skills.

The private sector may choose, therefore, to engage in a partnership with a community for a variety of reasons. Spenceley (2003) lists a number of reasons over and above the pure profit motive; obligations to provide benefits to rural communities through concession arrangements, the diversification of commercial activities, driven by CSR and image, or market advantage.

Ashley and Roe (2002) emphasised that when engaging with communities the private sector does, however, endure certain costs that go beyond simple financial costs to include problems of time, uncertainty and risk. This has been experienced by the company in this study in many of its partnerships with local communities; large amounts of time having been spent on negotiations, waiting for community decisions and in drawing up agreements that satisfy all parties. Armstrong (2012) stresses that if engagements with communities are to be successful, the private sector operator needs to be ethically responsible and prepared to make a long-term commitment to the community and its development. It was observed in this study that such negotiations and agreements with communities can be time-consuming and sometimes only provide financial rewards after a long period. It also takes time to build relationships and trust with a local community; both are needed to maintain relations and ensure long-term support. Wilderness Safaris' operations in Hwange National Park in Zimbabwe were observed to have invested a large amount of time and effort into building positive relationships with surrounding villages. This included employing two full-time community liaison and development project staff and initiating and developing numerous community development projects, including school rehabilitation, vegetable gardens, small business promotion; this resulted in a positive, harmonious relationship, with community support for ecotourism and conservation.

[38] Parts of this section (7.3.1) are taken from Spenceley & Snyman (2012).

It was observed that the private sector can certainly play an important role in initiating the development of new community institutions, facilitating and financing projects, assisting with the management of community projects, and training communities to manage them independently. This can be done by the private sector transfering skills to local communities through in-house training programmes and mentorships, as well as sponsoring formal training courses.

7.3.2. LOCAL COMMUNITIES

Because of the remote nature of many ecotourism operations, communities are important stakeholders, frequently supplying land, resources and labour. As has been discussed already, communities are not homogenous, but are constantly changing, defining and re-defining themselves, their needs and their aspirations. Their component groups are distinguished by age, gender, ethnicity, and socio-economic status and all these groups compete for the rights, revenues and resources available (Jones, 2001, p. 173). The author observed that in order to ensure the long-term success of conservation and ecotourism it is important that from the start of any tourism development, communities should be identified, as should their boundaries, membership, roles, responsibilities, attitudes and socio-economic needs. A plan for the distribution and management of any benefits should also be clearly set out. If this is not done future conflicts are likely, jeopardising the long-term sustainability of local ecotourism and conservation as land uses. The case of the OCT in Botswana illustrated that an inadequate plan for the distribution and management of community funds from ecotourism resulted in intra-community conflict, with many respondents being unaware of any benefits from ecotourism, and therefore not supportive of ecotourism in the area.

In all study areas it was observed that traditional authorities, such as Chiefs and Headmen, still wield tremendous authority over their communities. The attitudes or beliefs of a Chief can influence the attitudes and beliefs of entire communities. The early engagement of a tourism operator with the Chief/Headman/Traditional Authority in an area can, therefore, help garner support and build trust in a community. In line with this, WS experience has shown that early on in the development process communities and their leaders should be provided with information relating to the various positive and negative impacts of ecotourism to ensure all stakeholders have realistic expectations of the partnership.

If communities are to participate in ecotourism development it is also preferable that they formalise themselves into a legal entity at the community level, e.g. communal property

associations or community trusts. Legal status allows them to deal with other entities as an equal partner and enables them to enter into legally binding agreements.

It was noted that successful partnerships with the private sector are more likely to succeed if communities have, or establish, strong institutional structures and decision-making processes which are equitable, accountable and transparent. They need to be given decision-making opportunities, allowing them to control any actions affecting their lives (e.g. the Torra Conservancy and the Mpukane Community Trust are both involved in decision-making relating to ecotourism in their community). They should benefit from, and be empowered by, their involvement in tourism and their protection of the area's natural resources (Snyman, 2012a). Without this, communities may feel disempowered and therefore less supportive of ecotourism. This was observed in the Malawi and Zambia study areas, where local people are excluded from the National Park and decisions made relating to conservation and ecotourism in their area exclude them. Many respondents mentioned this lack of control, especially relating to controlling problem wild animals in their villages.

Alexander (2000) stresses that the recognition and acknowledgement of a community's traditional values are also important to the long-term success of any ecotourism development. This was also found by the author in this study. The incorporation of these values and traditions into ecotourism can serve to enhance the product and promote collaboration between the operator and communities. Common examples are the incorporation of cultural dancing, village visits and other cultural activities into the tourism experience. A number of WS camps (e.g. Damaraland Camp in Namibia, Hwange National Park camps in Zimbabwe, Pafuri Camp in South Africa) incorporate local culture and traditions in their tourism offerings.

Overall, the extent to which local communities will benefit from tourism depends on the extent to which they can negotiate sustainably and equitably with tourism companies. This in turn depends on the capacity and desire of the community to engage in such negotiations.

7.3.3. GOVERNMENT

Government is important as a provider of the infrastructure and institutions necessary to ensure private sector investment and commitment, as well as local support. It can create the appropriate conditions for private sector investment in ecotourism and local supply chains by providing support and incentivising investment.

There are a number of different strategies for governments to engage in that can help to stimulate micro-enterprise, promote more business linkages and increase the number of benefits reaching the poor (see Ashley, 2006; de Boer et al., 2011; DFID, 1999; Vedeld et al., 2012). One example of governments stimulating local micro-enterprise is the construction of craft markets close to tourism centres.

Transparency and accountability in any government or other governing institutions involved in tourism and/or conservation are important in establishing the trust and support of all stakeholders. Transparency will also reduce the openings for corruption and abuse of power. Unavoidably, local government support is important to the long-term success of ecotourism in Africa. Such support was observed in Namibia, where technical support was given to communities and ensured greater transparency in all dealings with WS.

7.3.4. OTHER PARTIES

There are numerous NGOs working in rural areas in southern Africa, such as the Integrated Rural Development and Nature Conservation (IRDNC), NACSO, Save the Rhino Trust (SRT), World Wildlife Fund (WWF), African Safari Lodge Foundation (ASLF), Conservation International (CI) and others. These NGOs are involved in various fields including capacity building, conservation, education and consultancy. The commonsense of NGO involvement suggests the importance of their role in community/tourism partnerships, through focusing on empowerment and building local capacity by means of training, education, organisational support and networking, but there is a risk of unmet expectations. Community expectations raised to unrealistic levels by NGOs and thus negatively impacting on relationships with the private sector and ultimately on the viability of JVs were seen by the author in Namibia and South Africa.

NGOs can play a role in terms of providing credit and non-financial services to micro-enterprises (DFID, 1999), as well as facilitating the flow of information to communities. They can also build capacity, give advice, and give access to leagal and other skills. It was noted by the author that it is important that NGOs ensure that projects are in line with community needs, involve some level of community empowerment and are not merely hand-outs.

Academic researchers can play an important role as providers of data and information to decision-makers trying to ensure the sustainability of ecotourism developments and

engagements with local communities. It is important, however, that researchers are respectful towards communities, their culture, wishes and desires and that they do not unnecessarily impose themselves on local communities or use ill-conceived research questions that influence community views and cause discontent. Epler Wood International (2004) highlight the role of local research institutions who partner with local businesses and build capacity of students and professionals, and deliver cost-effective services to ecotourism. Such relationships were observed in Namibia and Botswana, where the Polytechnic of Namibia and University of Botswana engage in practical tourism research and advise ecotourism operators.

7.4. PROPOSED OUTCOMES FOR THE COMMUNITY: WHAT DO THEY GET OUT OF IT?

Chapters Two to Six showed the range of outcomes a community can receive from an engagement with a private sector ecotourism operator. The degree of benefits will vary and in the case of pure private sector ecotourism will be highly dependent on the individual ecotourism operator involved and its particular motives for engaging with communities.

On the basis of this study, outcomes that a community can receive from an engagement with the private sector may include:

- Empowerment of local people;
- Skills training and development for local people;
- Individual or collective benefits, or a combination of the two, depending on the tourism model;
- A greater understanding of conservation and ecotourism, improving conservation behaviours/attitudes/perspectives and through this the sustainability of natural resources in the area;
- Local socio-economic development;
- Strengthening of local support institutions and improved infrastructure, e.g. roads and communications;
- In some cases, access to the natural resources in the area, as in the conservancy model in Namibia;
- Accountability from their leaders for their actions as well as the distribution of benefits;
- Increased pride in their natural resources, culture and community;
- Improvements in social welfare;
- Interactions with people from other countries that can increase awareness, knowledge, confidence and self-esteem;

- Sense of ownership of the ecotourism operation (especially in the cases of a JV or CBT);
- A greater sense of identity with their community and greater social cohesion (especially in the case of JVs or other business partnerships); and
- Long-term poverty reduction in the area.

The next section details how each of these can be achieved, using examples of successes and failures from the study areas.

Vedeld et al. (2012) contend that communities can increase tangible benefits from conservation by engaging in resource use agreements in PAs or buffer zones. Such agreements reduce conflict between communities and PA authorities and can be used in conjunction with ecotourism operations to extend the benefits further and to reach poorer, less educated households. An example of such an agreement on communal land is the Torra Conservancy agreement. In this, certain areas of the Conservancy were set aside for multiple use (wildlife and livestock), some for hunting and some exclusively for photographic tourism. Such an arrangement allows local communities to achieve benefits from conservation and ecotourism while still maintaining traditional livelihoods.

7.5. FACTORS TO BE CONSIDERED BY THE PRIVATE SECTOR WHEN ENGAGING WITH RURAL COMMUNITIES IN ECOTOURISM VENTURES

Important to the long-term success of ecotourism and conservation is a mutual understanding of the differing goals of all stakeholders, allowing for the development of a strategy taking these goals into account and satisficing benefits for all stakeholders, as well as minimising costs. It is also important that all stakeholders, especially affected communities, are aware of all the costs and benefits of ecotourism from the outset. Chapters Two to Six have highlighted some of the impacts that ecotourism can have on rural households. Based on these and the author's 15 years of personal experience in tourism and rural communities, the following section highlights important factors for consideration by the private sector when engaging with rural communities in ecotourism ventures, and puts forward suggestions for effective implementation of ecotourism operations in rural areas.

7.5.1. COMMUNITY STRUCTURE AND COHESIVENESS

It was found that communities with a strong identity, purpose and cohesion are more likely to have a strong common goal and this can make them easier to work with. This was the case in the Mpukane community in South Africa (see also Poultney & Spenceley, 2001). This community is relatively small, members are all of the same ethnic group and were removed from the forest reserves and relocated to their current village, providing a sense of cohesion and a strong identity. By contrast, the OCT community in Botswana is larger in size and comprises several ethnic groups, some of which are traditionally antagonistic towards one another.

Although community cohesiveness is important for long-term sustainability, Cole (2008) suggests that it can restrict an individual's entrepreneurial spirit. Moreover, in tightly-knit communities the pressures to redistribute wealth, especially to dependents and other family members, means that accumulating capital is difficult. This was clearly evidenced in the present study where staff respondents were supporting many additional people, over and above their direct family, and therefore frequently struggled to make ends meet each month (see Chapter Five, page 71). Despite Cole's (2008) potential problems, it was observed that for private sector partners there are more benefits than costs associated with community cohesiveness.

7.5.2. RESOURCE OWNERSHIP AND LAND MANAGEMENT SYSTEMS

Discussions with WS top management revealed that uncertainty relating to land tenure and resource ownership definitely deters private investors from investing in rural areas. The analysis of attitudes and impacts of the Damaraland Camp/Torra Conservancy joint venture (Snyman, 2012a), as well the results of Chapter Six, show that where there is some level of ownership, staff and the community can link their conservation efforts to the benefits from tourism. Certainly communities with secure land tenure and resource rights are most able to gain from and manage any tourism occurring on their land. As illustrated in this study, it appears that, generally, the greater the sense of ownership the more positive are attitudes and therefore the more likely ecotourism is to be supported by the community. Assisting communities to form JVs or involving them in other ways in the ownership of the business can, therefore, serve to foster support. Government's role in securing community's land tenure and resource ownership (as observed in the Nambian conservancy model) is important in encouraging private sector investment and support.

7.5.3. SIZE OF THE COMMUNITY

Much of the recent literature on common property resource management theory has agreed that '*small works*' (see for example Ostrom, 1990; Murphree, 1993, as cited in Jones, 2001). Reasons given include: transparency, accountability, ease of decision-making and communication, and benefit distribution. In larger communities it is more difficult for all members to be represented and to be heard. While it is obviously not possible to choose a small community in all cases, it is advisable for private sector ecotourism operators to engage with such communities where possible. This can assist in creating a more harmonious relationship between parties as well as ensuring that benefits received by the community truly make a difference.

It was noted that where there is a large community it is even more important to ensure that public distribution of benefits occurs, so as to link tourism and benefits received. The need for transparency and accountability in local institutions is also increased. The consequences of failures in this were observed in the OCT in Botswana and in the Makuleke community in South Africa; both large communities where the majority of respondents were unaware of the benefits received from tourism or what the local authority did with monies received. This can cause tensions between the private sector and communities.

It was observed in Chapter Six that where villages were smaller (e.g. Zambia case study and Snyman, 2012b) a greater percentage of the community were positive about tourism and conservation than in larger communities (e.g. OCT community), where corruption or a lack of transparency and accountability were seen to flourish more easily.

7.5.4. TRANSPARENCY AND ACCOUNTABILITY

Musamali et al. (2007) warned that without transparency and accountability by all parties (private sector ecotourism operators, government and local communities) relationships would lose credibility and confidence would be eroded. In the course of this study, this was observed in the OCT study area where a number of those interviewed stressed their disillusionment with the OCT Board and its lack of transparency. While the author was attending a *kgotla* (community meeting) in 2009, one community member stood up and said that they "*smell a rat*" when it came to the OCT Board's handling of the JV finances (Snyman, forthcoming(c)). Though WS's relationship with the OCT Board was positive, the Board's lack of transparency and accountability in the community caused conflict, initially between the community (who were frequently told by the Board that WS had not paid the

lease fees due, despite payments being up-to-date) and WS and later between the broader community and the Board.

7.5.5. LOCAL GOVERNANCE AND LOCAL SUPPORT INSTITUTIONS

Solid, accountable and transparent local governance structures with clearly defined roles, such as Community Trusts or Communal Property Associations (CPAs), are important for the long-term success of local ecotourism. If such structures are missing, it is important to assist a community in initiating and developing them. It was observed that, ideally, the design of such structures should be based on existing community structures, such as Chiefdoms, Tribal Authorities or Trusts. In the course of this study accountable, transparent structures were observed in the Torra case study and Mpukane community. In both these cases the communities were relatively small, had existing community structures in place and a desire for ecotourism in their area.

Support institutions that emerge to co-ordinate and regulate the interactions between stakeholders can also assist with education, training, skills development and in some cases, conflict resolution. These can include government, NGOs, private sector and community institutions. The IRDNC and NACSO in Namibia are examples of successful support institutions which have engaged in community education, support and capacity building.

7.5.6. ENGAGEMENT AND EQUITY MODELS: JOINT VENTURES, COMMUNITY-BASED TOURISM, ETC.

It was noted during the research that before a private sector ecotourism operator and a community engage it is important that they agree at what level they would like to interact. This will obviously be influenced by various factors; land tenure, ownership of resources, education levels, available institutions, etc. In some cases communities have evinced little desire to partner financially in an ecotourism business and apparently prefered to receive set lease fees (for example some communities in Botswana prefer to receive a lease fee), while in other cases communities expressed desire to be involved in the tourism business and all related decision-making (Torra and Makuleke case studies).

Spenceley and Snyman (2012) and Appendix A highlight different equity/ownership arrangements for tourism operations in Africa. Benefits from such arrangements vary depending on the agreements between parties. One thing is clear; while it is not always *necessary* to have a formal agreement for engagement, it is advisable.

7.5.7. LOCAL PARTICIPATION

The experience of the Torra Conservancy (see Snyman, 2012a) suggests that communities that feel part of the ecotourism operation, through JVs, employment or as suppliers of good and services, and are involved in decisions relating to their communities, are more likely to be friendly and accepting of tourists and tourism in their communities. It was observed in some areas of Namibia, however, that where communities were not specifically involved in decision-making, especially with the Himba people who felt their culture had been exploited and they lacked control over tourism in their area, that a number were sceptical of tourism, and less welcoming to tourists.

It was noted that participation and community involvement create awareness of tourism, help to resolve conflicts, build trust and help manage expectations, ensuring that operations are in line with what works in a community and what does not, as well as ensuring that benefits accruing reflect local community's needs.

It was noticeable during the research that consultation and involvement of communities in the tourism development process needs to be contextually and culturally appropriate, an important part of the planning process. It is important for the private sector, if they are to have the support of the whole community, to ensure that they also use the appropriate cultural/traditional channels of communication and engagement. This is often not obvious in communities where there are both Community Trusts and Tribal Authorities (e.g. Makuleke and Mpukane communities in South Africa) and is why early engagement and research in partner communities is beneficial to the long-term success of partnerships between private sector ecotourism operators and communities.

Experience has shown that a key to successful partnering with local communities is early identification of potential leaders in the community who can participate in negotiations, decision-making and management of community institutions, and who are representative of the whole community. In the Zimbabwe study area, the Headman of Ngamo village and in the Zambian study area, Chief Malama, are proactive and positive about ecotourism's benefits in their community. This has ensured the support of the majority of the community and enabled WS to interact positively with them, developing socio-economic projects and building schools and libraries, over and above direct employment benefits. On the other hand, many respondents in the Makuleke villages in South Africa mentioned that they had not received benefits from the tourism partnership and they felt that the local Chief benefitted the

most from the partnership. It was clear to the author that the benevolence and interest of leaders in the development of their own communities is important in linking local socio-economic development to conservation.

7.5.8. EDUCATION, SKILLS TRAINING, CAPACITY BUILDING AND EMPOWERMENT

Among the biggest obstacles to effective community participation in ecotourism observed was a lack of knowledge and skills. As has been shown in the study areas poverty and low levels of education are correlated. Education allows wealthier families to diversify to a greater extent than poorer families and also increases the likelihood that they will be amongst those empowered by conservation.

Observed by the author and highlighted by numerous other authors (Armstrong, 2012; Bordreaux & Nelson, 2011; Coria & Calfucura, 2012) is the problem of communities that need training in administration, financial reporting and strategic planning as well as other skills such as bookkeeping, negotiating contracts and improving communication and marketing capabilities.

On the other hand, education relating to ecotourism and conservation and raising local communities' awareness of the benefits and costs associated with them, is important for long-term sustainability and the management of expectations (to be discussed further later). This can take place through educational talks, focus groups, formal and informal discussions, information sharing and active involvement with tourists and tourism.

It was observed that community capacity-building needs to be ongoing and will be more effective if it is location-, context- and culturally-specific and applicable to the community's needs and desires. Another approach (see also Ashley, 2005) observed by the author in Botswana, Malawi and South Africa is for the private sector to engage in a mentoring programme with local community members so that they can learn about tourism, the commercial realities of a business, and the standards of a tourism business, as well as other tourism-related skills.

One objective of private sector investment in education and training is to differentiate one ecotourism operation from others in the area as service quality is often an outstanding feature in the high-end ecotourism market. Training and uplifting staff are also intended to increase job satisfaction and therefore staff retention, thereby lowering overall training costs and

improving service levels. In the Malawi, Namibia and Zimbabwe study areas staff training resulted in many respondents moving into more qualified positions and remaining with WS for long periods.

7.5.9. SETTING OBJECTIVES/GOALS AND DEFINING ROLES

One of the issues that emerged in this study was the need for stakeholders to define their roles and responsibilities and to set objectives to keep these aligned. The updating of objectives, goals and roles needs to be ongoing. The close relationship between the Torra Conservancy and WS ensures that goals are aligned and expectations are managed. In the OCT case study, where it was observed that roles and objectives had not been as clearly defined, there was more conflict between the community and ecotourism. For any future operations a recommendation is that objectives and roles are documented in formal, signed agreements and that performance is monitored on the basis of these.

7.5.10. COMMUNICATION

It has been argued by numerous authors that any successful ecotourism project requires regular communication and dialogue with involved communities (Armstrong, 2012; Nepal & Weber, 1995, as cited in Bruyere et al., 2009; Chandralal, 2010). Their view is that meaningful dialogue and the sharing of information between stakeholders helps to develop mutual trust and to build social capacity in rural communities. The form and frequency with which it takes place would be determined by the relevant cultural and social norms in the area of operation and the need to align stakeholder objectives, especially when expectations about ecotourism's results differ. In such cases, communication would not only be needed in the development phases, but should be ongoing, with regular information-sharing, to minimise distrust and lack of interest amongst communities.

A feature of this thesis has been the importance of communication that informs local communities of the value of their natural resources, the potential for their sustainable use, and ways they can benefit from ecotourism and minimise the costs of HWC through mitigation. Despite WS having a good relationship with the Makuleke CPA, the large size of the community (15 000+) limits the reach of benefits received and emphasises the need to communicate to communities regarding the benefits they receive from tourism and conservation. Where communication fails or is inadequate, as in the OCT case study, communities become disillusioned and conflicts arise. Where communication channels are open conflicts may still arise, as in the Zimbabwe, Zambia, Mpukane and Torra case study

areas, but are quickly resolved through discussions, and communities remain positive and supportive of ecotourism and conservation.

7.5.11. MANAGING EXPECTATIONS

When promises to communities exceed delivery the resulting disillusionment and frustrations can erode support for conservation and the associated ecotourism product. This was evidenced in the Makuleke study area after a number of NGOs and consultants and, even potentially WS, portrayed unrealistic benefits emerging from the community tourism concession. This experience highlighted the importance of realistic expectations and managing them throughout the initiation, development and operation phases of any ecotourism development. It also illustrated the importance of being realistic about tourism's impacts on rural development and economic growth, especially in projections for community partnerships and what the community can expect to receive from the tourism operation, as well as the timing of receipt.

The presence of numerous tourism stakeholders (private sector, community, government, NGOs) in the negotiations for the Skeleton Coast Concession in Namibia made it particularly time-consuming and difficult to manage all stakeholder expectations and, ultimately, no agreement was reached. The inability to balance expectations and reach agreement in terms of what can and cannot be achieved by the project resulted in the closure of the tourism camp and resultant loss of employment and community income.

A key tenet for ecotourism stakeholders to follow in terms of managing expectations is; underpromise and overdeliver.

7.5.12. EMPLOYMENT IMPACTS

The direct employment impact of an ecotourism operation will largely depend on the size of the operation. However, ecotourism managers need to make a profit, not create jobs. There is therefore an optimal labour intensity. Wunder (2000) suggested communal job rotation schemes to spread income in a community but these can cause tension and are less secure than full-time, permanent employment. Such schemes are more likely to work in cohesive, relatively small communities and have been successful in some of WS' operations in Zambia, where staff in seasonal camps are placed in other non-seasonal camps on a rotational basis in order to provide them with income for a longer period.

7.5.13. REVENUE SHARING/BENEFIT DISTRIBUTION/PARTICIPATORY SCHEMES

The importance of having equitable, efficient benefit distribution plans in place, as well as transparent, accountable governing institutions for long-term community support emerged in 2010 when residents of local villages in Botswana, who had always been supportive in their interactions with the company suddenly became less so. It was not initially obvious what the problem was. Investigation showed that the problem originated with the local Community Trust which was using the lease fees for personal gain and wasting large amounts on administration and salaries. Their malfeasance was cloaked in rumours about WS and the community was not receiving the benefits due to it.

In the course of this study many revenue sharing/benefit distribution schemes investigated combined a lack of transparency and high levels of corruption in revenue collection and distribution. In a number of instances this may have been because the relevant community authorities lacked experience in managing finances and distributing revenues. It may also have resulted from the fact that the more educated in the community were running the scheme, leaving only the uneducated to monitor distribution and management. This problem was evidenced in Botswana and South Africa. The Torra Conservancy however had successful individual as well as collective benefit distribution. Capacity building and support from NGOs in the area (e.g. IRDNC and NACSO) played a role in this success. Clearly, it is neither possible nor necessary for every individual member of a community to benefit personally from conservation/ecotourism in order for them to see its value (evidenced in Chapter Six), but it is important that benefits are distributed widely and equitably, to the household level (extended family) if possible and that benefits are seen to be distributed.

In the Torra Conservancy in Namibia the first cash dividend from the joint venture was paid out in January as school fees were due. This had a positive impact on households and resulted in community members having positive attitudes towards the Conservancy and, therefore, conservation (Snyman, 2012a). The timing of benefit distribution can therefore also be important to its impact, as well as the perceived value of its impact.

Some problems with benefit sharing schemes observed by both the author and by Tumusiime & Vedeld (2012, p. 25) include: developing institutions to manage benefit distribution; problems with defining beneficiaries; problems with elite capture, favouritism or nepotism; lack of local involvement; lack of access to information; lack of facilitation; institutional

disorganisation; lack of monitoring and evaluation; multiple stakeholders with differing agendas, and uneven power distributions.

7.5.14. CONFLICT MANAGEMENT

Inter- and intra-community conflicts were observed to impede ecotourism development and partnerships. Partnerships, such as in the Makuleke and OCT case studies, that started off positively became more difficult when expectations were not universally and simultaneously met. Ecotourism managers engaging with a local community should be aware that while conflict is inevitable at some stage during the relationship, mediation, negotiation and arbitration can be used to manage it. If there is a history of conflict or mistrust between communities and the ecotourism/conservation partner, a third party (such as an NGO (e.g. the IRDNC in Namibia, or an independent researcher) can also play a role in conflict management.

7.5.15. LEAKAGES AND LINKAGES

The problem of leakage is frequently described as reducing tourism's benefits (Mitchell & Ashley, 2010; Pleumarom, n.d.). The issue is clear; if a company is only concerned with profits, leakages will be significant in high-end ecotourism. But if they are interested in CSR and the triple bottomline of sustainability there are many avenues along which they can move to reduce leakages.

Ways to improve the flow of ecotourism benefits to local communities include cultural tours and other activities, traditional dances, broadening hiring practices, outsourcing to local suppliers of goods and services and forming joint ventures with community partners. Approximately 70% of WS's more than 2700 staff are from local communities. Many of their camps offer cultural dancing and village visits and there is a move to outsource more goods and services to local suppliers. All of these extend linkages and improve the flow of benefits to local communities. An understanding, by the private sector, of the skills, goods and services available in communities is an important part of the process in ensuring that linkages are established. This can be done through workshops, surveys, skills assessments, etc. Private sector communication with the community regarding goods and services required will also improve the chances of setting up linkages.

It was observed that developing products based on a community's existing livelihood or cultural activities, such as agriculture, handicrafts, fishing, drumming or dancing, provides

mechanisms to reduce leakage and increase the income retained in communities; serving to enhance the livelihoods of the people living in and around PAs.

According to Ashley and Haysom (2008, p. 129) "*poor people may earn as much income by supplying goods and services to the tourism sector as they do from working directly in tourism itself*." The key factor here is that, unlike direct employment in ecotourism, this is not directly limited by the size of the tourism operation and can therefore involve more people and impact more households.

7.5.16. PHILANTHROPY/DONATIONS

The author observed that many tourists want to give to community social and development projects. An issue that arises is that their generosity can involve a negative externality by inducing behavioural changes in communities (for example begging) and influencing expectations for the future. Philanthropy therefore needs to be directed and structured which will also then improve the experiences of future visitors.

Meyer (2008) stressed as a considerable advantage of philanthropic donations that, if well managed, they can reach particularly vulnerable community members, such as the elderly, the sick and the young. Examples of such management include &Beyond's *Africa Foundation* (www.africafoundation.org) and Wilderness Safaris' *Wilderness Wildlife Trust* (www.wildernesstrust.com) and *Children in the Wilderness Programme* (www.childreninthewilderness.com). Ideally, it is important that if donations are to be managed sustainably and not simply treated as handouts to the poor there needs to be an investment of time and effort on the part of the private sector operator.

The author's experience initiating and developing community projects in rural areas has shown that any community project undertaken should have a thorough and realistic appraisal of the benefits and costs for all parties involved, as well as determining the sustainability of the project and level of community involvement.

Freeman et al. (2004, p. 169) stress that building schools, clinics, and improving roads will not in themselves help reduce poverty if there is no concomitant public sector institutional environment encouraging dynamic diversification of rural livelihoods to support the maintenance and operation of infrastructure, such as providing teachers, nurses, etc. The author also observed that although tangible projects, such as infrastructure, are often more

'popular' with donors it is important to direct donations towards intangible, but often more important projects, such as capacity building.

In summary, if philanthropy is to assist, empower and uplift local communities successfully it should not only be done simply as a public relations or CSR exercise, as this can lead to dependency and a continued reliance on outside funding. It should be; targeted; structured; have a long-term, sustainable plan; empower people; provide what the community (not the donor) wants and needs; be applicable to the cultural and natural heritage of the area; and be fully sustainable whether its focus is individual (e.g. scholarships) or collective (e.g. infrastructure) or a combination. The problem of philanthropy based on donor desires not community needs is illustrated by the story of an NGO that donated dish-shaped solar panels to a Himba community in north-west Namibia, returning a year later to find the community using the panels to collect water; water being of far greater importance to the community than power.

7.6. MODELS OF ENGAGEMENT

The four engagement models discussed here are joint ventures, community-based tourism (CBT), private-public partnerships (PPP) and pure private sector ecotourism. Which engagement model is chosen by a private sector ecotourism operator depends largely on the factors discussed in section 7.5., but it seems clear that a community's characteristics can determine the optimal engagement model.

Regardless of the system of engagement the ideal community would be small, cohesive and ethnically homogenous, with a clear desire for ecotourism in the area and a clear understanding of the essentials of conservation and basic business. This is rarely the case: communities are complex social and economic structures, with varying characteristics. Based on the findings in Chapters Five and Six, comments from interviewees, and the author's experiences in communities, Table 56 provides guidelines for the ideal relationship system (e.g. a successful joint venture seems to require a small community).

Table 56: Various factors influencing the choice of a specific ecotourism model

Community Characteristics	Joint Venture	Community-Based Tourism (CBT)	Public-Private Partnership (PPP)	Pure Private Sector
Community size	Small communities	Any size community	Any size community	Any size community
Ethnicity	Similar ethnicity	Similar ethnicity	Different ethnicities	Different ethnicities
Cohesiveness (minimal internal conflict)	Requires strong cohesiveness	Requires strong cohesiveness	Requires medium cohesiveness	Cohesiveness not a necessity
Community governance	Very good governance	Very good governance	Good governance	Good governance not essential
Support institutions	Preferable	Required	Not required, unless there is conflict	Not required, unless there is conflict
Education	Preferably good	Preferably good	Not critical	Not critical
Proximity to natural resources	Preferably close	Preferably close	Not critical	Not critical
Infrastructure	Preferably good access & communication	Preferably good access & communication	Preferably good access & communication	Preferably good access & communication
Desire for ecotourism	Required	Required	Required	Required
Leadership	Strong community leadership required	Strong community leadership required	Strong leadership not essential, but preferable	Strong leadership not essential, but preferable
Investment capital	Required in some cases	Required in most cases	Not required	Not required
Tourism knowledge & experience	Preferable	Required, though can be advised	Not required, but preferable	Not required, but preferable
Business skills/acumen	Preferable	Preferable	Not required	Not required
Human-wildlife conflict*	Medium to high	Medium to high	Low	Low

*In these cases it is the acceptability of HWC that is being considered. Where communities are directly involved and receive benefits they are more likely to tolerate HWC than in areas where they are not always receiving direct benefits.

The community can undermine tourism success through increased poaching, crime, conflict, etc. For this reason long-term sustainability is aided if ecotourism *staff* are empowered and educated. Similarily, managers deciding on a model of engagement should be aware of its long-term impacts on rural livelihoods. Where communities have no access to natural resources in the PA, e.g. in the Malawi, Zambia and Zimbabwe case studies, then minimising future problems can require that the operation be seen as a primary alternative livelihood but also that there should be mitigation of HWC while secondary benefits to communities are also maximised.

7.7. CONCLUSIONS AND OTHER FACTORS TO CONSIDER FOR SUSTAINABILITY

The inclusion of rural communities in ecotourism operations appears an unambiguously 'good thing' promoting positive attitudes towards tourism and conservation, raising household incomes and assisting in long-term poverty reduction. It also promotes the sustainability of conservation as communities receive benefits tied to the protection of ecosystems. However, the long-term success of ecotourism and conservation as land uses requires that private sector/community partnerships are empowering, equitable and provide tangible and intangible, direct and indirect, benefits, as with any Pavlovian conditioned response. These benefits also need to be seen to be received and need to be connected to the associated ecotourism and conservation area.

This study noted HWC as a major cost of conservation faced by communities. If future increases in wildlife numbers, resulting from conservation, exacerbate HWC and escalate economic damages, they threaten the sustainability of ecotourism through the erosion of community support (pers. obs. author, 2009-2011; Richardson et al., 2012). The mitigation of HWC is therefore important to the long-term success of conservation and ecotourism (for detailed mitigation measures see Appendix K).

7.8.1. MITIGATING HUMAN-WILDLIFE CONFLICT

HWC was mentioned in all study areas as a major problem and, therefore, cost of conservation. Many respondents in Malawi suggested that conservation should only involve flora and that animals should be 'contained' and, in some cases, not conserved at all. It was observed (Botswana, Malawi, Zambia and Zimbabwe) that HWC can exacerbate existing social conflicts as well as conflicts already existing between local communities and PA authorities. The number of people affected by HWC typically exceeds those who receive

benefits from conservation or ecotourism; mitigating conflict would, therefore, help garner support. There are not only direct costs associated with HWC but also indirect costs mentioned by local villagers in the course of this research included loss of sleep, restrictions on movement and reduced school attendance.

As observed in this study there is often a correlation between ecotourism and HWC as wildlife numbers increase due to the new protection afforded to them by ecotourism (evidenced at Pafuri Camp in the Makuleke concession and Damaraland Camp in the Torra Conservancy). In threatening conservation in Africa, HWC threatens ecotourism, as community members often see the two as interlinked. The mitigation of HWC is therefore desirable for the long-term success of conservation and ecotourism as land uses in many areas of rural Africa.

It is important to note that those impacted by HWC may be far distant from those receiving benefits from wild animals through ecotourism; large animals (such as elephants) can move long distances. This was evidenced in Botswana, Malawi, Namibia and Zambia where wild animals were damaging crops far from conservation areas, while the benefits were largely received locally.

Treves, Wallace, Naughton-Treves and Morales (2006, p. 390) differentiate between two possible interventions:

i) Those intended to reduce the severity and/or frequency of encounters between people and wildlife including; barriers, guards, deterrents, changes in the location or types of human activities and wildlife removal and;
ii) Interventions to raise peoples' tolerance for the remaining encounters including; compensation programmes, incentive schemes, environmental education and regulated public harvests.

During the course of this research, many respondents mentioned dissatisfaction with the time delays and bureaucracy involved in compensation schemes. Officials, on the other hand, mentioned the perverse incentives associated with compensation schemes. Compensation carries the risk of moral hazard, i.e. villagers having reduced incentive to guard livestock and crops at night. Indeed there were cases of villagers purposely leaving sick animals unattended at night in order to receive compensation.

The author noticed in the villages in the panhandle of the Okavango Delta that elephants became accustomed to the noise of the soda can 'fences' and chilli fences were subsequently introduced; highlighting the importance of local communities continuously developing new deterrent methods to avoid animals becoming habituated and less afraid of the measures being used.

In the Malawi and Zambia study areas respondents often mentioned that they felt powerless to manage conflicts with wildlife as they were prohibited by the National Parks to take any action against wild animals in their fields. This powerlessness can result in less positive attitudes towards wildlife. Schemes developed and implemented at a village level, such as found in the Torra Conservancy, are therefore more likely to be sustainable in the long run as they are often more reliable and easier to manage than centralised interventions (also found by Osborn & Parker, 2002 and Western & Waithaka, 2005). They also ensure a level of empowerment and a feeling of control over HWC which can serve to reduce negative attitudes and perceptions. Management strategies should, therefore, be specific to the relevant socio-cultural conditions in the area as well as location-specific.

Selecting the appropriate mitigation measure for an area requires a detailed understanding of all underlying factors and patterns associated with the crop raiding incidences. For an analysis of some of the more common mitigation measures see Appendix K.

Effective mitigation of HWC will help reduce the direct costs communities face living in wildlife areas. Concomitant with this needs to be an increase in the benefits they receive, shown in the study areas to be mostly through ecotourism. A combination of the two can provide a socially optimal outcome for rural communities and will assist in gaining their support for the long-term sustainability of conservation and ecotourism.

7.9. POLICY IMPLICATIONS

The data analysis and issues discussed in this thesis highlight important policy implications relating to a need for local community support for conservation and ecotourism. This can be achieved through allowing community access to natural resources, HWC mitigation, providing alternative livelihoods through employment and supply chains and promoting formal education through infrastructure provision and scholarships. Specific policy implications have been presented in the previous chapters where applicable. This section presents general policy implications.

Over and above HWC mitigation, it is important that communities receive (and see themselves receiving) real net benefits that match their expectations. As illustrated in this chapter and in Chapter Six failure to do so can lead to dissatisfaction and discontent and, ultimately, to conflict between the community and ecotourism operator, such as in the case of the OCT in Botswana.

A number of factors, observed by the author and also suggested by Cattarinich (2001), can diminish ecotourism's positive effects on local communities. Some of these problematic factors have already been discussed but, in summary, they include:

- Corruption, local as well as national;
- Government opposition to private sector ecotourism and limiting its potential through taxes, restrictive visas and regulations;
- Threats to and insecurity relating to land tenure, rights and land security;
- Conflicts of interest/lack of co-operation between stakeholders;
- Environmental pressures, resulting from over-population and/or climate change;
- Demand for other uses for the land e.g. mining, agriculture;
- Lack of demand for the product by tourists;
- Restrictive national/international policies and regulations;
- Local jealousies which can hinder progress and cause conflict;
- Social or political upheaval and conflict that can affect tourists visiting;
- Natural disasters, such as floods, impacting on tourism in an area, e.g. Pafuri Camp;
- Inefficient or inappropriate benefit distribution plans;
- High levels of HWC and therefore costs borne by the community.

Measures to mitigate and, where possible, eliminate these factors should be included in all ecotourism developments.

This study found that informing communities of the potential benefits of tourism and improvements in local capacity is important for the realisation of economic benefits of tourism and for the positive effects of tourism to be fully comprehended. In addition, building financial and business management capacity in community organisations is important for the long-term success of these initiatives, as is ensuring accountability and transparency. This can be done by the private sector, governments or NGOs. It was observed in the study areas that capacity building can occur through mentorships, skills transfer, formal

training, in-house training, workshops, education, as well as through the exposure to new cultures.

As has been discussed, local participation is important in terms of empowerment, local development and acceptance of tourism and conservation. There were, however, several factors identified during the research which limit the participation of local communities in ecotourism. These included lack of access to capital, lack of tourism and business skills, lack of access to the tourism market, poor transport and communication, no access to land rights preventing them from having collateral to obtain loans and in some areas, a lack of desire or motivation to be involved in tourism (see also de Boer, van Wijk & Tarimo, 2011). A summary of the ways, identified and discussed in the thesis, in which the private sector can assist in this regard include:

- providing start-up capital to community entrepreneurs and guiding them to develop the required products and services for the ecotourism industry in the area. This start-up capital can either be given as a loan or can be part of the lease fee or joint venture payments to the community;
- providing skills training, education and development for entrepreneurs on how to establish, operate and manage local businesses;
- providing skills training and development for employment in the ecotourism industry;
- taking guests on community visits and encouraging them to visit communities to give local people access to the tourism market;
- upgrading infrastructure, especially road networks and schools;
- indirectly, promoting tourism to an area can result in local government improving infrastructure, including communication and transport infrastructure, in the area;
- creating partnerships with local communities, e.g. through joint ventures;
- creating value chain linkages to include more local people in the supply of goods and services;
- assisting communities in setting up partnerships (with NGOs, government) that promote capacity building;
- helping with HWC mitigation projects, e.g. chilli planting, bee projects; and
- targeting philanthropic donations sustainably and to areas of need.

Private sector ecotourism operators, such as WS, have found that in order to ensure the long-term sustainability of their business it is also important that local and national governments create an enabling environment in which they can operate efficiently. Tax breaks and

subsidies for operators who employ locally and for local skills development and training can act as incentives for the private sector in these remote areas. Reliable institutional and infrastructural support (government or NGO, e.g. IRDNC in Namibia) can also assist operators as well as communities in implementation, capacity building and management.

Like Naughton-Treves, Buck Holland and Brandon (2005) this thesis argues that ecotourism in rural areas can provide economic incentives for conservation. Although it cannot solve poverty conservation can help reduce it by maintaining ecosystems services and supporting livelihoods in various ways. This was evidenced in the Okavango Delta in Botswana, in Zambia and in Zimbabwe where a number of households relied on natural resources in their area as a source of livelihoods, e.g. grass reeds, wild fruits, etc. It is premised that if communities value ecotourism operations for the benefits they provide then they will value the biodiversity that supports it.

In observing successes and failures of the ecotourism sites studied it was found that in developing ecotourism in rural areas it is important to take cognisance of local cultural and ecological knowledge, norms, customs and traditions and to respect them and, where possible, incorporate them into the ecotourism development. In this way, the product will be unique and communities will feel part of the development, be able to participate in it, receive benefits that it may generate and have pride in it. As a result, WS camps are designed according to local architecture with local materials and local décor and staffed with local people. Such development also provides an ecotourism operator with unique selling points and greater marketing opportunities.

It was also found that even though benefits are being paid to community organisations the assumption should never be made that these benefits will ultimately reach the whole community. It is important, therefore, that private sector/community partnerships have a high degree of transparency and accountability on both sides and that benefits are seen, by the whole community, to be received and distributed. This can be done through formal agreements, public handing over of benefits, collective (rather than individual) benefit distribution to community development projects and regular, public meetings with communities detailing the partnership and benefits and costs to date.

It is difficult to convince local communities that it is important to conserve natural resources that they will never have access to or be able to use. It makes sense therefore that long-term

sustainability requires that communities should have, wherever possible, some level of access to the natural resources they are protecting. The monitoring of use has a host of its own problems but that should not discount use completely. The Namibian CBNRM programme has shown that community use of natural resources and land can work in conjunction with ecotourism and still remain sustainable. Namibia's low population density obviously makes this easier to manage and sustain. Countries such as Malawi, with high population densities, will need different approaches that take cognisance of this, but the complete prohibition of rural communities from accessing natural resources in their area is unlikely to be sustainable for the long term, unless alternative livelihoods and benefits are provided. South African National Parks has recently implemented a community initiative in the Kruger National Park allowing local community members to enter the Park, escorted by Park rangers, to collect mopane worms (a local delicacy and important protein source). This allows access to important traditional natural resources that local communities were previously prohibited from accessing inside the Park.

The calculations in this study have shown that, on average, ecotourism staff are supporting seven people and for every extra bed in a tourism camp, there are approximately 14 people indirectly impacted and two direct jobs created (see Chapter Five, page 73). These figures are useful when determining the impact of ecotourism in rural areas and can be used in the development of tourism concession tender documents and economic assessments of tourism operations. The large sample size and analysis in six different countries adds robustness to these results giving them credibility and wide applicability.

A thorough understanding (as provided in this thesis) of the communities with whom one is working, their socio-economic needs and status, their culture, their history, their attitudes towards tourism and conservation and the reasons for these attitudes, will go a long way in developing mutually beneficial relationships between private sector ecotourism operators and local communities. This thesis has shown that the impacts of ecotourism are not only on the employed. There are also cross-sectional and integenerational positive impacts. It is, however, important to be aware that the benefits of ecotourism should not be overstated and expectations should be managed accordingly.

7.10. FUTURE RESEARCH

This study provided an in-depth socio-economic analysis of ecotourism, its economic impacts in rural communities and what factors impact community members' attitudes towards tourism and conservation in six countries. There are, however, a number of other associated research areas that it would be useful to investigate further.

7.10.1. SITE-SPECIFIC COST-BENEFIT ANALYSES COMPARABLE ACROSS SITES

Adams & Infield (2003) state that it seems logical that if wildlife/conservation is paying its way then local people living in the area should be better off with the park than they would be without it. The same applies for an ecotourism operation. If local communities in the area are better off because of ecotourism in their area, than they would be without it, then it makes socio-economic sense to have ecotourism in the area. Communities will also be more likely to support the ecotourism operation under these circumstances. Site-specific cost-benefit analyses of ecotourism operations in rural areas would assist in a clearer understanding of the role of ecotourism in poverty reduction and local socio-economic development. A comparison study of a community with ecotourism and one without, with other characteristics as consistent as possible, would add value in terms of the true benefits and costs of ecotourism. Alternatively, a study prior to ecotourism being introduced and then a follow-up study after five years could also illustrate ecotourism's true impact on household incomes and attitudes. A comparison of top-down (for example using some form of economic model, e.g. input-output table) and bottom-up approaches (as used in this thesis) would also provide a broader view of the economic impacts of ecotourism.

7.10.2. FURTHER ANALYSIS OF LIVELIHOOD DIVERSIFCATION STRATEGIES

Future research should focus on rural households' livelihood diversification strategies and their capacity to cope with various environmental and economic shocks, specifically related to climate change. This is currently being studied to a certain extent, but extensive studies are required as this may be one of the main challenges many communities will face in the future.

7.10.3. ACTUAL HWC COMPARED WITH PERCEIVED HWC

Cross-country studies relating community perceptions of HWC to actual conflict would also be useful to gain a better understanding of the role of perceptions in determining attitudes and behaviours (see research done by Dr. Anna Songhurst in the Okavango Delta).

7.10.4. ANALYSIS OF LOCAL LINKAGES AND TOURISM MULTIPLIERS USING A LARGE SAMPLE

More detailed, extensive studies on the value chain and the level of local linkages and multipliers of ecotourism in rural areas would also give a better understanding of the real impact of ecotourism in remote, rural areas. As discussed in Chapter Five, this study focused primarily on the first round of ecotourism expenditure; staff spending their salaries in the community. It did not account for any further rounds of spending or of spending done by the ecotourism operator in terms of lease fees or supplies and, therefore, no estimate was made of the multiplier effects of ecotourism in these remote rural areas. It should be noted that this impact is likely to be substantial and it is recommended that future research attempts to assess subsequent rounds of this spending in the community using a large sample size. This has been done with a number of smaller samples, but in order to be representative it needs to be extended and comparative in different countries and areas.

7.10.5. DETAILED ANALYSIS OF THE IMPACT OF DISTANCE ON ATTITUDES AND INCOMES

Further research on the impact of the distance between the ecotourism operation and the community on attitudes towards tourism and conservation and the reasons for these differences would assist ecotourism operators in managing relationships with those communities living at different distances more efficiently and effectively.

7.10.6. ANALYSIS OF CULTURAL FACTORS IMPACTING COMMUNITY ATTITUDES

The finding in this thesis that there was no obvious disharmony between staff and non-staff respondents in terms of household incomes and that there appeared to rather be an aspirational effect is interesting and should be investigated further. An analysis of the cultural precursors for aspiration as opposed to envy of those better off would add value to understanding the attitudes and behaviour of communities.

The present study has added to the literature on the direct impact of ecotourism employment on raising household incomes, improving attitudes and reducing absolute poverty at the household level across a range of countries, land management systems and community engagements. Using the results in this study as baselines, further longitudinal studies will be able to assess changes over time and the future sustainability of ecotourism as a land use.

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APPENDIX A - DIFFERENT ECOTOURISM EQUITY ARRANGEMENTS IN AFRICA[39]

As discussed in the thesis, the original approach to conservation in Africa was traditionally that of 'fortress conservation,' which involved the exclusion of people as residents from declared PAs, the prevention of consumptive use and the minimisation of any other forms of human impact (Adams & Hulme, 2001). The realisation that PAs need financing and were unable to pay for themselves, led to the introduction of different forms of tourism in a number of areas to generate income for PAs. This too resulted in the development of a number of different equity arrangements for tourism operations in Africa. Benefits from such arrangements vary depending on the agreements between the parties and the extent of impacts on poverty reduction also varies with the chosen equity/partnership agreement.

It was observed in this study, and also by Lapeyre (2011a), that many rural communities lack the necessary financial capital, business expertise and marketing channels to set up ecotourism operations, and then to manage and operate them. The level of community involvement will therefore vary and depends on the specific conditions of the equity arrangement; with a large amount of involvement occurring in community-based tourism (CBT), and limited, if any, in public-private partnerships (PPPs). There are some unique cases of public-private-community partnerships (such as the Makuleke contractual area (one of the study areas in the present study) in the Kruger National Park in South Africa (Mahony & van Zyl, 2001; Reid, 2001; Steenkamp & Uhr, 2000).

If the aim is simple profit maximisation then the best way is via the private sector, but if the aim is to maximise local benefits, then JVs or CBT may be optimal (Spenceley, 2008). Equity mechanisms help ensure that financial benefits for responsible land custodianship are possible and can, if managed correctly, have a significant impact on rural households' social welfare in the form of community development such as health or education infrastructure, as well as poverty reduction impacts through collective revenues, direct and indirect employment.

1. PURE PRIVATE SECTOR TOURISM

Largely due to the lack of the necessary commercial focus to generate sufficient revenues from natural resources African governments and state conservation departments have been turning to the private sector to assist with the management and maintenance of conservation areas

[39] This Appendix is adapted from, and adds to, Spenceley & Snyman (2012) including specific reference to the study areas.

(Spenceley, 2003). The private sector appears to be better placed to identify opportunities, realise the potential of a destination, and drive forward product development. It also has the potential to adopt a range of highly effective strategies for the benefit of communities and their livelihoods (Simpson, 2008).

The growing interaction of the private sector and rural communities can be illustrated through six different operational approaches[40] (adapted from Spenceley, 2003):

- *Private sector on communal land*, e.g. Wilderness Safaris' Damaraland Camp, Wilderness Safaris' camps on Okavango Community Trust (OCT) land;
- *Government land with private sector involvement and community linkages,* e.g. iSimangaliso and Rocktail Beach Camp, commercialisation of South African National Parks, Liwonde National Park in Malawi and Wilderness Safaris' Mvuu Camp;
- *Private land and private operators, with community linkages,* e.g. &Beyond and Ngala Game Reserve;
- *Community land claims and land transfers,* e.g. Makuleke Contractual Area in Kruger National Park;
- *Amalgams of land ownership types,* e.g. Greater Addo Elephant National Park, South Africa;
- *Community businesses,* e.g. Fonteine Laundry Service, Damaraland Camp, transport at Pafuri Camp.

An alternative view of the promotion of private sector ecotourism is that park authorities regard conservation as their primary task and core competence and, therefore, do not engage in ecotourism. Another issue to consider is that park revenues may not be 'ring-fenced'; instead they often need to be returned to the central fiscus whereas park costs have to be met from the park budget. It therefore makes sense to shift some costs on to the private sector, even if it means that the parks' apparent revenue is reduced by the diversion of potential visitors to the private operation. The park will, in most cases, still receive a fee or percentage of the revenue, but not have to bear the costs.

2. COMMUNITY-BASED TOURISM (CBT)

The concept of community conservation emerged in the 1980s and focussed on achieving a balance between biodiversity management and the improvement of local people's livelihood security (Barrow & Fabricius, 2002, p. 74). Adams and Hulme (2001, p. 13) define community

[40] See Spenceley (2003) for more detailed case studies of some of these interactions.

conservation as "*those principles and practices that argue that conservation goals should be pursued by strategies that emphasise the role of local residents in decision-making about natural resources.*" Community conservation generally implies the management of natural resources by communities but it can also include community-based tourism (CBT) as an income-earning opportunity for communities in the management of their natural resources. Clearly, CBT is one way in which community conservation can earn tangible benefits for communities. In general, CBT gives the local community substantial control over, and involvement in, the development and management of the tourism enterprise and a major proportion of the benefits remain with the community (Denman, 2001).

In relation to poverty reduction, the level and distribution of economic benefits from CBTs depends on many factors including the attractiveness of the tourism asset, the type of tourism operation, the nature and degree of community involvement, and whether earnings become private income or are channeled into community projects or other benefit-spreading mechanisms (Kiss, 2004; Wunder, 2000). The experience with CBT in southern Africa has been mixed, with numerous examples of failed projects, which have left serious discontent behind, for example the first attempts at CBT made at Santawani and Sankuyo Bush Camp in Botswana.

3. PUBLIC-PRIVATE PARTNERSHIPS (PPP)

Public-private partnerships (PPPs) can take many forms and have varying degrees of government involvement. PPPs are likely to be more efficient than CBT because they combine the business skills of commercial tourism operators with the land management skills of PA agencies (Buckley, 2002; Doan, 2000). Additionally, they do not have the downside of leaving a disappointed community behind if they fail, because as one partner moves out the state will find another one to take over. PPPs can also enhance training, skills transfer and development and can encourage and enable contact with the global market and, through this, assist local enterprises with overcoming the obstacles to value chains by allowing access to capital, skills, infrastructure, and technology (Ashley et al., 2007; de Boer, van Dijk & Tarimo, 2011).

4. JOINT VENTURES (JV)

A PPP is a joint venture between the state and the private sector. We now look at joint ventures between communities or local landowners and private enterprises. Ashley and Jones (2001, p. 2) define a joint venture as "*a contractual partnership between a community or local institution and a private investor, to work together in establishing and operating a single tourism or*

hunting enterprise," they add that joint ventures add cultural and ethical components to the product.

Spenceley (2008) and Mitchell and Ashley (2010) found that joint ventures tend to generate the best all-round benefits, but were more difficult to establish and had higher transaction costs than pure private sector operations. This was also observed by the author (see Snyman, 2012a). Joint ventures where there is a private sector partner tend to be more successful because of the business acumen of the private sector partner (Spenceley, 2008), as well as their experience in the industry, ability to reach the market and a greater understanding of the market. According to Mitchell and Ashley (2010) joint ventures include significant benefit flows to communities in addition to the flow of income through wages and contracts that benefit employees and tourism entrepreneurs. Joint ventures can however be highly complex arrangements and this can make them vulnerable to dissolution.

Joint ventures are increasingly popular and might have the greatest potential for generating significant revenues for communities, and might also be more likely to succeed than wholly community-run enterprises, particularly in the early stages. However, communities will often need outside assistance to organize themselves, obtain and assert their legal rights and understand their obligations in such partnerships (Ashley & Garland, 1994; Wells, 1997; Wunder, 2000). In the author's experience, communities are often financially unsophisticated and, not surprisingly, suspicious that their ignorance could be turned against them, which can create difficulties in terms of contract development (e.g. initial ecotourism agreement with the Makuleke Community for Pafuri Camp). Communities also need to understand the risks associated with joint ventures that include community shareholding; as not only do they share in the profits, but also any losses.

With the vision of creating a successful tourism business that local people can benefit from, the trend away from CBT towards JV partnerships in sub-Saharan Africa has recognised that partnerships where communities bring resources (e.g. land, natural attractions) and the private sector brings business acumen and networks (e.g. linkages with tour operators, business planning and marketing experience) can create 'win-wins' for the parties. According to Stronza (2010, p. 62) joint ventures have the potential to enhance the management and conservation of common-pool resources. As shown in Chapter Six, JV arrangements also resulted in the most positive community attitudes towards tourism and conservation.

5. OTHER EXAMPLES

It is not always necessary to have formal agreements between stakeholders. Wilderness Safaris (2010) had an informal agreement with four Namibian conservancies located adjacent to the Skeleton Coast National Park where they had an ecotourism camp. As part of this agreement, WS voluntarily paid community levies to these conservancies, based on camp occupancies. These payments were made because the communities have to bear the costs of living adjacent to the Park and are prevented from accessing natural resources in the Park.

Another partnership option is for communities to partner with an NGO. Depending on the partnership such an arrangement allows communities access to skills, capacity-building, funding, or a combination of these. The role of the IRDNC in capacity building in the Namibian conservancy programme is one such example (Jones, 1999, 2001, 2004, 2010; Nott, Davis & Roman, 2004), as is the partnership between African Wildlife Foundation (AWF) and the Koija group ranch for the Koija Starbeds Ecolodge in Kenya (Nthiga, Mwongela & Zellmer, 2011).

The chosen equity or partnership arrangement will depend on the community, the private sector ecotourism operator, land rights, natural resources as well as the policies, legislation and institutions in place.

APPENDIX B - DATA SOURCES FOR SOCIO-ECONOMIC VARIABLES

Data	Source	Reference or website
Botswana Population	UN data, 2008	http://data.un.org/
Botswana Gini Coefficient & Life expectancy	Action for Southern Africa - Peace, Justice, Solidarity: Country Profile for Botswana	http://www.actsa.org/Pictures/UpImages/Country%20profiles/Botswana%20factsheet.pdf
Botswana unemployment	Central Statistics Office Botswana	http://www.cso.gov.bw/index.php?option=com_keyindicators&id=115
Botswana HIV prevalence	UNICEF, 2009	http://www.unicef.org/aids/files/hiv_pmtctfactsheetBotswana.pdf
GDP per capita figures	UN Data	www.tradingeconomics.com & http://data.un.org/
Malawi Unemployment	Integrated Household Survey 2005	http://www.eldis.org/vfile/upload/1/document/1110/Malawi%20second%20integrated%20household%20survey%202004%20-%2020051.pdf
Malawi HIV prevalence	Malawi Demographic and Health Survey 2010	National Statistical Office (NSO) and ICF Macro. 2011. *Malawi Demographic and Health Survey 2010*. Zomba, Malawi, and Calverton, Maryland, USA: NSO and ICF Macro.
Malawi life expectancy	The U.N. Experience in Malawi	http://www.unmalawi.org/agencies/reports/unaids_25Years_HIV-Report.pdf
Malawi GDP/capita	UN Data, 2008	http://data.un.org/CountryProfile.aspx?crName=MALAWI
Malawi Size & Gini coefficient:	Action for Southern Africa - Peace, Justice, Solidarity: Country Profile for Malawi	http://www.actsa.org/Pictures/UpImages/Country%20profiles/Malawi%20factsheet.pdf
Namibia Population	Namibian Population and Housing Census	http://www.npc.gov.na/census/index.htm
Namibia Gini Coefficient	Namibian Household Income and Expenditure Survey 2003/4 (NHIES)	http://www.nsa.org.na/files/downloads/NHIES%20Main%20Report.pdf
Namibia Unemployment	Namibian Statistics Agency	http://www.nsa.org.na/files/downloads/024_PPP%20of%20The%20Namibia%20Labour%20Force%20Survey%202012%20Report.pdf
Namibia Life Expectancy & HIV prevalence	World Health Organisation	http://www.who.int/countries/nam/en/
HDI and rankings for all countries	Human Development Report 2010	http://hdr.undp.org/en/media/HDR_2010_EN_Table2_reprint.pdf
SA size, population, life expectancy, Gini coefficient & unemployment rate, HIV prevalence, population density	Statistics South Africa	www.statssa.gov.za
Zambia life expectancy & HIV prevalence	Index mundi	http://www.indexmundi.com/zambia/demographics_profile.html
Zambia population density, size, population	Zambian Statistics; Agriculture Analytical Report	http://www.zamstats.gov.zm/
Zambia unemployment	Zambia Census 2000	http://www.zamstats.gov.zm
Zimbabwe size, population, population density, life expectancy, unemployment	Central Statistical Office, Zimbabwe	http://www.zimstat.co.zw/ & http://www.zimstat.co.zw/dmdocuments/Labour/Force.pdf

APPENDIX C - STUDY COUNTRY BACKGROUNDS

This Appendix includes a background to the history of PAs and conservation, as well as tourism, in the study countries. Backgrounds to the specific study areas are in Chapter Three.

1. BOTSWANA

The Republic of Botswana is a country of about 582 000 km² in size. Population is sparse and unevenly distributed; the 2006 Demographic Survey estimated it at approximately 1.7 million. The availability of water is a dominant factor influencing the pattern of settlement. Consequently, about 87% of the population lives in the eastern part of Botswana where rainfall is more regular, ground water is available, and the soil is relatively fertile.

At the time of its independence in 1966, Botswana was one of the poorest countries in the world. It was largely rural and dependent on agriculture. With the discovery of minerals, especially diamonds, soon after independence, Botswana quickly became the fastest growing economy in the world. Diamonds rapidly dominated the economy in terms of contributions to GDP, to government revenue and to export earnings. From being almost non-existent in 1966 mining's share of GDP rose to 47% in 1986 before declining slightly to 35% in 2010 (Botswana African Economic Outlook, 2012). Agriculture on the other hand declined to less than 5% by 1986 from more than 40% in 1966. After ten years of successful diamond mining the government recognised that minerals are depletable resources and that there was a need to diversify the economy away from a heavy reliance on minerals. This has been the focus of government policy in the last 20 years or more as is reflected in both the National Development Plans and in various budget speeches (Leechor & Fabricius, n.d.). While diamond mining contributes a relatively large proportion to growth, GDP, export shares and government revenues, its direct impact in terms of employment is quite small; accounting for less than 5% of formal employment (Leechor & Fabricius, n.d.).

The good performance in terms of growth driven by diamond mining has however enabled the country to make significant human and infrastructural investments. As a result, most communities have access to schools, health and water within reasonable distance. The investment in infrastructure, health and education has seen some major results in terms of human development. Social indicators show that life expectancy had gone up, before a big reversal from HIV/AIDS, literacy rates are high (84% in 2009 (World Bank Data, 2012)), and more schools, roads and hospitals have been provided (Botswana Demographic Survey,

2006). This was observed while conducting the interviews for this study, with even the remote study village of Gudigwa having a newly-built school and teachers' accommodation. There was also an upgrade of the rural access road and electricity installation underway in the study villages (2009).

1.1. HISTORY OF PROTECTED AREAS AND CONSERVATION IN BOTSWANA

Initially, the implementation of CBNRM in Botswana was driven by the USAID-funded Natural Resources Management Programme (NRMP). Botswana officially embraced CBNRM in 1989 with the first community trust formed in 1993 (Jones, 2007; Mbaiwa & Stronza, 2011; Rihoy & Maguranyanga, 2010). The CBNRM programme has been endorsed by the Government of Botswana since 2004 and was formalised into policy in July 2007 (Piet, 2007, as cited in Lepper & Goebel, 2010). In order for communities to obtain a 'head lease' on land they have to establish a legally registered community-based organisation (CBO), whose constitution shows proof of accountability and fair representation (Rozemeijer, 2009). A 'head lease' does not give communities ownership of the land, but allows them the right to use the natural resources on the land (Rozemeijer, 2009).

In general, the most common legal entity formed under the Botswanan CBNRM programme is the Community Trust, where trust members include all adult residents who have lived in the local area for at least five years (Simasiku, Simwanza, Tembo, Bandyopadhyay & Pavy, 2008). One of the disadvantages of this process is the lack of education, training and skills of the trust members and the resultant poor institutional and financial management (Simasiku et al., 2008; Snyman & Spenceley, 2012).

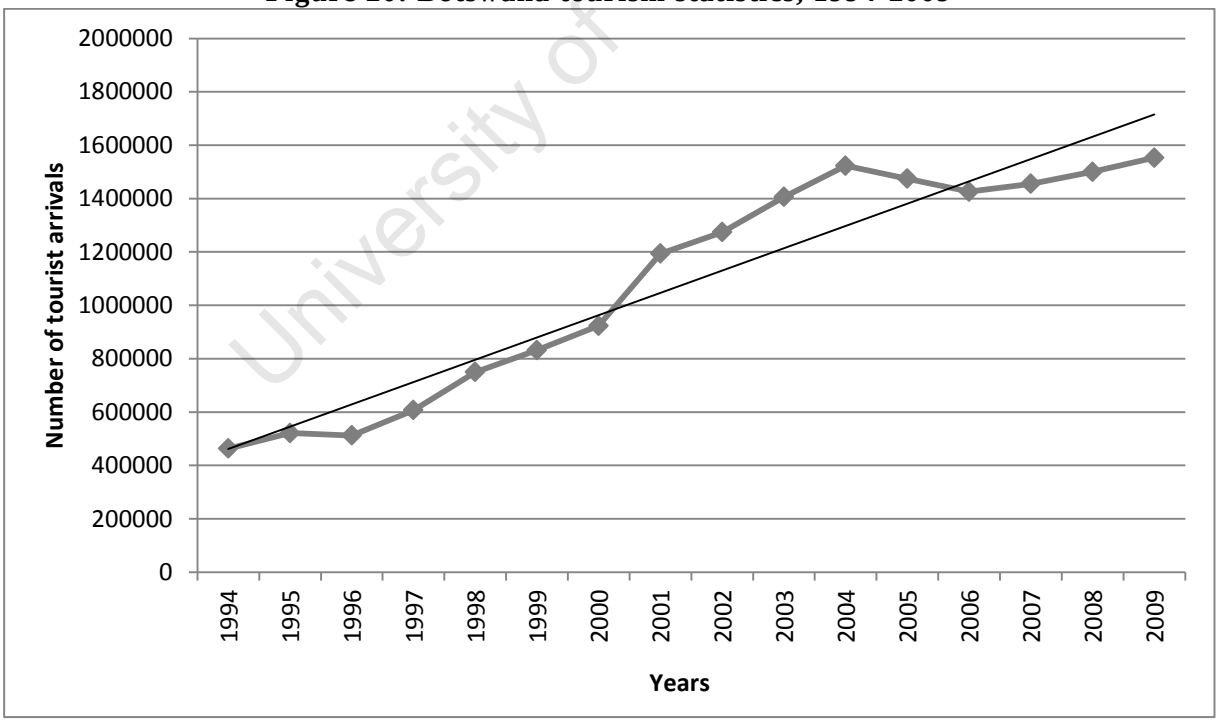
Originally, Botswana's CBNRM programme differed from the programmes in Zimbabwe (CAMPFIRE) and Zambia (ADMADE) (both discussed later in this section) as most of the revenue was returned to the community (Boggs, 2004). The CBNRM programme was however revised in 2008. Under the revisions only 35% of revenue from the sale of natural resource concessions and quotas could be retained by the CBOs for their Trust operations (as opposed to 100% in the past), while 65% of the funds would go to the National Environmental Fund (NEF) for financing general community projects throughout the country (DeMotts & Hoon, 2012; Rihoy & Maguranyanga, 2010). The idea behind this change was to ensure that those communities who did not have access to valuable natural resources could still benefit from the natural resources of the country. The 65:35 system has recently (2012) come under criticism because of a lack of fund distribution and is, currently, under review.

1.2. TOURISM IN BOTSWANA

Botswana's tourism strategy has always been to expand low volume/high cost ecotourism (Lepper & Goebel, 2010; Sammy & Opio, 2005). This policy is designed to limit the negative impacts of mass tourism as well as ensure an exclusive experience. It therefore keeps costs and ecological impacts low and maintains a high willingness to pay (WTP) among the small number of users. For this, Government has set aside more than 17% of all available land for National Parks and wildlife reserves and a further 22% as wildlife management areas (WMAs) (Leechor & Fabricius, n.d.).

Although tourism makes up a relatively small portion of Botswana's GDP (3.4% in 2005/2006) it is likely to prove extremely important to the country's future growth and, with the declining value of diamonds, the government is looking increasingly towards tourism (Tourism Statistics Botswana, 2007). According to the Botswana Department of Tourism, tourism has grown at an average of 8.4% per annum since 1994. Between 2000 and 2009 the number of tourists arriving in Botswana grew by over 50% (Botswana Tourism Research, 2011). Figure 20 shows tourist arrivals in Botswana over the period 1994 to 2009.

Figure 20: Botswana tourism statistics, 1994-2009



Source: Botswana Department of Tourism, 2009

According to the WTTC (2011), the direct contribution of travel and tourism to GDP in Botswana was expected to be BWP3.12 billion (2.5% of total GDP) and it was expected to directly support 21 000 jobs (3.5% of total employment) in 2011.

2. MALAWI

Malawi covers an area of 11.85 million hectares, with Lake Malawi covering 2.43 million hectares (21%) of this total area. The total population in the 2008 Census was more than 13 million, occurring at an average density of 139 people per square kilometre, increasing from 43 people per square kilometre in the 1966 Census (Malawi Demographic and Health Survey, 2010). The 1998 to 2008 intercensal population growth rate was 2.8% per annum (Malawi Demographic and Health Survey, 2010). About 90% of the population live in rural areas (UNDP Malawi, 2009), with sixty-five percent of the total population estimated to live in poverty (Ellis & Freeman, 2004).

Malawi is among the 15 poorest countries in the world (Novelli & Scarth, 2007). According to DFID (2003, as cited in Novelli & Scarth, 2007) the southern part of Malawi (where the research in this study was conducted) has the highest proportion of poor households due to shrinking per capita size of cropland holdings. The concomitant degradation of land due to over-farming and erosion leaves few alternative land uses available in these rural areas.

Malawi has 27 administrative districts in three different regions (Northern, Central and Southern) (National Statistical Office of Malawi, 2002). The Balaka District which surrounds the western side of Liwonde National Park, where the study camps are situated, has a population of 316 748, occurring at a population density of 144 people per square kilometre (National Statistical Office of Malawi, 2008). According to the 2008 Population and Housing Census, the southern Region has the highest population (45% of the country total) in the country. The country's major exports are tobacco, tea, and sugar, accounting for approximately 85% of Malawi's domestic exports (Malawi Demographic and Health Survey, 2010).

2.1. HISTORY OF PROTECTED AREAS AND CONSERVATION IN MALAWI

Malawi differs from the other nations in this study in that it has very little wildlife living outside formal PAs and in being much more densely populated, with a large amount of land converted to agriculture (Jones, 2007). Between 1996 and 1999 legislation was introduced to promote community involvement in the wildlife, fisheries and forestry sectors. Since 2000, new policies promote the collaborative management of natural resources, stronger land tenure, and make provision for greater revenue sharing between government and local communities (Jones, 2007, p. 31). CBNRM implementation in Malawi has focused primarily on the management of forest and fisheries resources, whereas wildlife management has been focused

on linking local communities with PAs, rather than the actual management of natural resources on communal land (Jones, 2007). The aim has been to develop community outreach in order to improve park-people relationships, to give neighbouring communities a greater economic stake in PAs and to reduce the illegal use of natural resources (Jones, M., 2003, as cited in Jones, 2007).

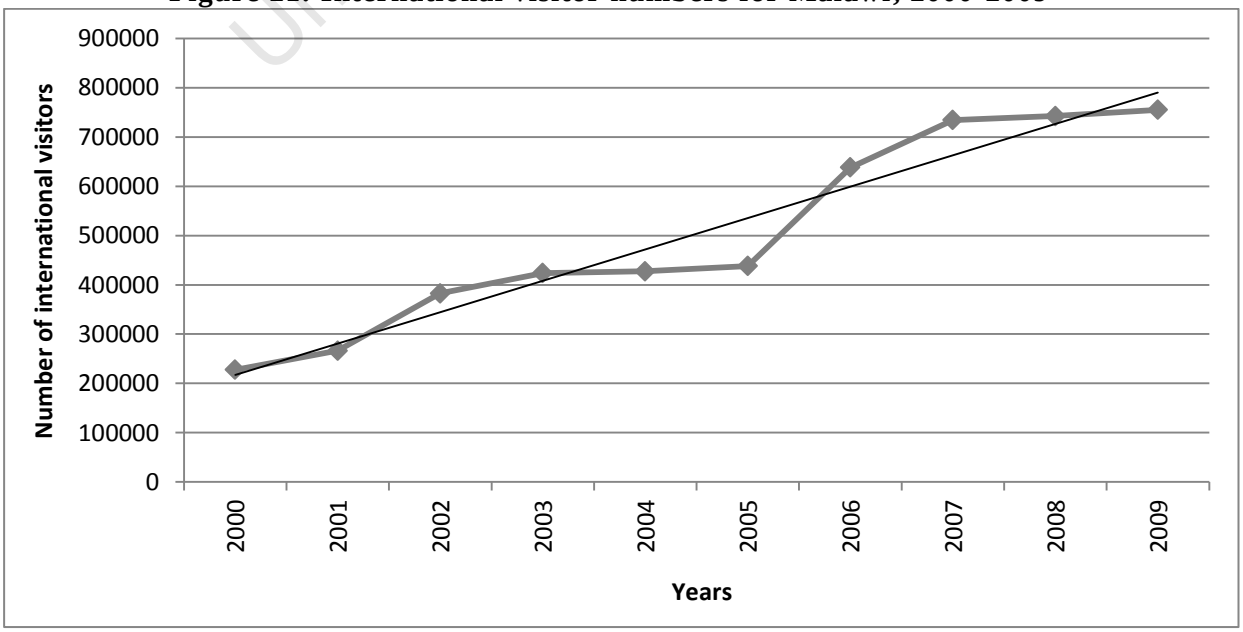
Despite policy being positive and pro-active, Jones (2007) noted that implementation has been slow and there has been little empowerment of local communities. While conducting the interviews in 2009, it was noted that this situation seems unchanged.

2.2. TOURISM IN MALAWI

In the decade from 2000 to 2009 there was a steady rise in the number of visitors to Malawi, from 227 000 to 755 000 (National Statistical Office of Malawi, 2009). Visitors into Malawi contributed MK67 billion ($46 million) to the economy in 2009, spending on average MK89 800 ($612), against MK60 billion ($41 million) and average expenditure of MK81 566 ($556) in 2008 (National Statistical Office of Malawi, 2009).

Figure 21 shows the increase in international visitor numbers to Malawi since 2004. Despite levelling off in the last three years, the growth in visitor numbers is still encouraging, but recent unrest (2011) is likely to negatively impact on ecotourism. Political and social stability in African countries is critical to the long-term success of ecotourism and the consequent impacts on local economic and social development (Snyman, in press).

Figure 21: International visitor numbers for Malawi, 2000-2009



Source: National Statistical Office of Malawi, 2009

Direct employment in the travel and tourism sector in Malawi was estimated by the WTTC (2011) at 95 000 jobs in 2011 or 3.1% of total employment.

3. NAMIBIA

Namibia covers an area of 824 292 km² and in the 2011 Census had a population of 2.11 million, with a population density of 2.6 people per square kilometre (Namibia Statistics Agency, 2011; Namibia Tourism, 2012). Previously a German colony and then under South African rule and called South West Africa, Namibia gained independence in 1990 and now has a multi-party democracy.

The Namibian economy is driven primarily by its natural resources; the core sectors are mining (especially diamonds), fishing, agriculture, manufacturing (meat, fish) and tourism (Crépin & Hamilton, 2008).

Namibia faces a number of environmental challenges; freshwater scarcity, desertification, deforestation, and unrehabilitated mines (Crépin & Hamilton, 2008a). Many of these are related to the fact that it is not only the driest country in sub-Saharan Africa but particularly prone to droughts and floods. Rainfall is erratic, both temporally and spatially, leading to large localised differences in precipitation and large annual fluctuations (Jones, 2000). People therefore need to either engage in semi-nomadic herding which follows the rain, otherwise if they settle, they need to diversify livelihoods. This makes any sustainable land use that can diversify livelihoods important to poverty reduction and development. Most households in the study areas owned livestock in the form of cattle and goats. Subsistence agriculture was limited mostly to small household gardens.

3.1. HISTORY OF PROTECTED AREAS AND CONSERVATION IN NAMIBIA

Namibia retains the highly centralised state system it inherited from the earlier South African administration (Jones and Murphree, 2000). In 1975 however, fifteen years before independence, the wildlife management approach was decentralised and private landowners were given legal ownership rights to the wildlife on their lands (Jones & Murphree, 2001, as cited in Nelson & Agrawal, 2008). This reform only applied to freehold lands owned by whites in the country and not to communal lands; it allowed white farmers to manage wildlife on their farms as they saw fit (Nelson & Agrawal, 2008). The result was a general increase in wildlife numbers in the country, after the earlier decimation of wildlife through poaching (for rhino horn and elephant tusks, as well as for food) and hunting in the 1960s. The main

achievement of this reform was to confirm that if land owners have rights to the wildlife on their lands then they conserve them more efficiently (Barnes & Jones, 2009; Jones, 2010; Jones & Murphree, 2001; Jones & Weaver, 2009). There are therefore three main types of land tenure in Namibia; state land (which includes all National Parks), commercially owned land and communal land (Nott & Jacobsohn, 2004).

In 1996, after independence from South Africa, there was much debate around the lack of land tenure and rights to wildlife in the communal areas. Wildlife laws were subsequently amended to create communal conservancies. These conservancies granted local communities usufruct rights over common wildlife species, though permits were issued for rarer species (Jones, 2010; Nelson & Agrawal, 2008). In Namibia, wildlife is the property of the state, but under the 1996 legal amendment (Nature Conservation Amendment Act of 1996) community conservancies received conditional use rights over wildlife. An important feature of the Namibian institutional framework for communal conservancies is that local rights over wildlife and tourism are entrenched in legislation; they are not mere administrative privileges that can arbitrarily be removed (Jones, 2010).

The number of communal conservancies has grown from 15 to 79 in the eleven years from 2002 to 2013 (NACSO, 2013). The 79 registered conservancies manage 160 092 km² of communal land, encompass more than 234 400 residents and generate income from the overall conservancy programme of more than NAD45 million (approx. USD5.6 million) (NACSO, 2011, 2012).

Prior to registration as a conservancy the following conditions need to be met; 1) community election of a representative committee, 2) community agreement on a legal constitution which provides for the sustainable management and utilisation of natural resources in the area, 3) an equitable benefit distribution plan must be in place, and 4) the community needs to define and record boundaries of the geographical area of the conservancy and to have the agreement of neighbours relating to the boundary areas (Ashley & Jones, 2001; Jones, 1999, 2003; Lapeyre, 2011; Long, 2002). Requirement three is crucial to the long-term success and sustainability of the conservancy as the distribution of collective revenues earned from wildlife helps people link these benefits with improved natural resource management and wildlife use and management. It also supports livelihoods and improves the legitimacy of the conservancy structure for residents (Mulonga & Murphy, 2003).

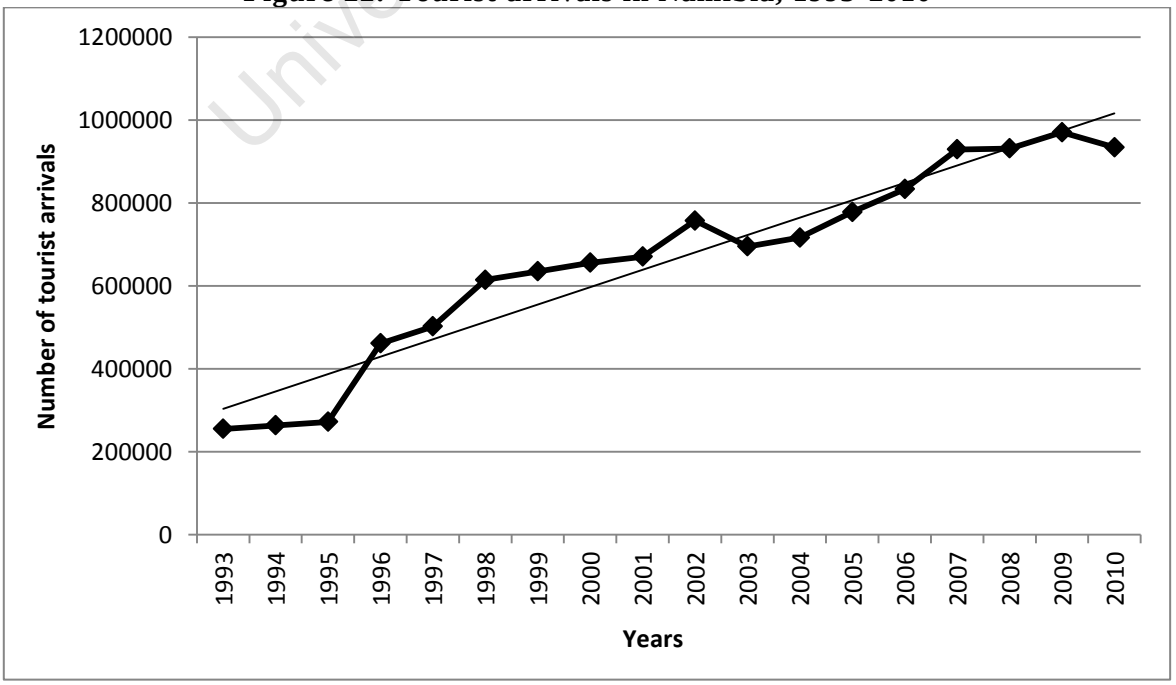
One income generating option for conservancies is to engage in a partnership or joint venture with the private sector to develop ecotourism in the conservancy. JV tourism in Namibia is currently the largest overall source of benefits to the conservancies. In 2010, the 24 existing formal JV agreements contributed NAD18.6 million (47% of all income; approx. USD2.3 million) to conservancies (NACSO, 2011). Over and above the direct cash benefits, there are also benefits associated with skills development and training provided by the private sector.

3.2. TOURISM IN NAMIBIA

Namibia's Vision 2030 says that '*tourism is an important employment generator in Namibia, particularly in the rural areas where most tourism activities occur'* (GRN, 2002a in Lapeyre, 2011a, p. 303). Tourism receipts contributed 3.9% to GDP in 2006 and illustrate the importance of this sector to national development (Tourism Satellite Account, 2006). In terms of GDP share, Namibia's tourism sector is proportionally one of the world's largest (Crépin & Hamilton, 2008).

In 2006 the direct employment impact of tourism was 20 588 jobs (5.1% of total employment), which was expected to rise to 76 872 in 2007 (Tourism Satellite Account, 2006). The Namibian Tourism Satellite Account (2006) also estimated that the total contribution of travel and tourism economy jobs was 71 800 (17.9% of total employment) in 2006.

Figure 22: Tourist arrivals in Namibia, 1993-2010



Source: Ministry of Environment and Tourism (MET), 2010

Tourism arrivals have been on an upward trend since independence (Figure 22) but are sensitive to worldwide economic trends illustrated by the decline in foreign arrivals from 2009 to 2010, largely due to the overall world economic crisis. Although tourist arrival numbers are still high, the economic crisis had a serious impact on revenues in the tourism industry in Namibia (pers. comm., Wilderness Safaris Namibia, 2012).

4. SOUTH AFRICA

South Africa is a medium-sized country, covering a total land area of 1 219 090 km². South Africa has nine provinces, each with its own legislature, premier and executive council and distinctive landscape, population, economy and climate. In 2011 the mid-year population estimate was 50.59 million, with large variances between provinces (Statistics South Africa). Despite a relatively high GDP per capita (USD3825.09 in 2011 (Trading Economics, 2013)), 42.9% of South Africa's population lives on less than $2/day (www.undp.org).

4.1. HISTORY OF PROTECTED AREAS AND CONSERVATION IN SOUTH AFRICA

The first official PAs in South Africa were the forest reserves of Knysna and Tsitsikamma, proclaimed in terms of the Cape Forest Act of 1888. This was followed by the establishment of forest services in Natal in 1891, and in the Orange Free State and Transvaal by 1903 (Department of Environmental Affairs and Tourism (DEAT), 1997). A number of statutory game reserves were also established; Pongola (1894) and Sabie Game Reserve (1898), Hluhluwe, Umfolozi and St Lucia Game Reserves in 1895 and Giant's Castle in 1903 (DEAT, 1997). After the Union of South Africa was formed in 1910 the central government took over conservation responsibility and in 1926 the first National Parks Act was passed (DEAT, 1997). The establishment of many PAs resulted in the forced removal and dispossession of many black people and PAs were seen as fenced off areas with no human presence. The result was a view of PAs as playgrounds for the privileged elite and of biodiversity conservation as exclusive and irrelevant to the majority of South Africa's people (DEAT, 1997). Over the last 30 years there have however been efforts to expand PAs and conservation onto private and communal lands and to introduce more cooperative conservation models (DEAT, 1997).

South African National Parks (SANParks) manages the majority of the large PAs in South Africa, with other local government organisations, such as Ezemvelo Wildlife in KwaZulu-Natal and other Provincial Parks Boards, operating in specific areas. Over the last 20 years there has been growth in the number of private game reserves, especially in the Eastern Cape

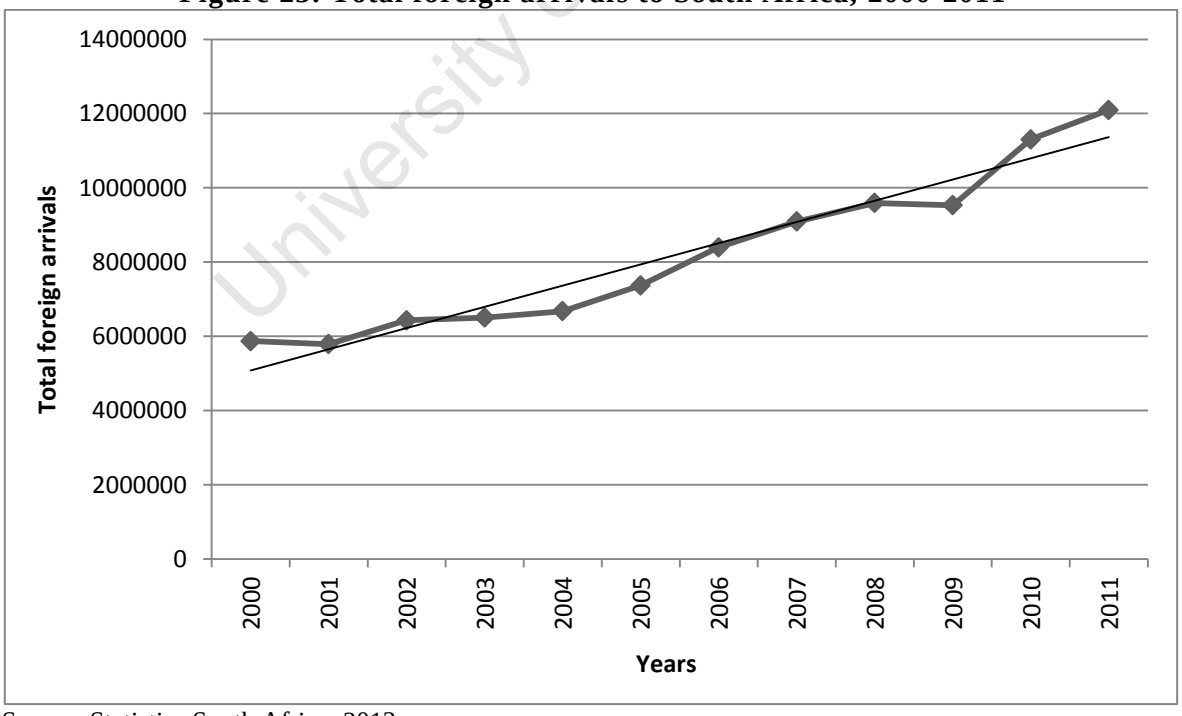
Province, and a move to join farms into larger conservation areas (Snyman, 2009). Corporate Social Responsibility and outreach programmes have encouraged private sector engagement with local communities around these reserves. SANParks has introduced a People and Conservation department and has been engaging with communities living around National Parks in order to ensure that local communities receive some form of benefits from the conservation areas (http://www.sanparks.org/people/).

4.2. TOURISM IN SOUTH AFRICA

Historically, the main contributors to South Africa's GDP were mining and agriculture. The manufacturing and service sector however replaced them and over the years, tourism has made an increasing contribution to GDP. According to Statistics South Africa (2013) tourism directly contributed 3% to GDP (R84.3 billion (approx. USD11.81 million) and was expected to directly support 598 432 jobs (4.5% of total employment) in South Africa in 2011.

Figure 23 shows that visits to South Africa by foreign travellers reached a record 12.09 million in 2011 (Statistics South Africa, 2013). The majority of these were, however, still low income visitors from the rest of Africa (Annual Tourism Report, 2009).

Figure 23: Total foreign arrivals to South Africa, 2000-2011



Source: Statistics South Africa, 2013

5. ZAMBIA

Zambia is a land-locked sub-Saharan country, covering an area of 752 612 km², with an average population density in 2000 of 13.1 people per square kilometre (Demographic and Health Survey, 2007). The country is ethnically diverse with 73 different tribes, seven major native lingual-cultural groups and significant minority Indian and White populations (Chidakel, 2011). The main tribes are the Lozi, the Bemba, the Ngoni, the Tonga, the Lunda, the Luvale and the Kaonde (Demographic and Health Survey, 2007).

Historically, the territory of Northern Rhodesia (currently Zambia) was administered by the [British] South Africa Company from 1891 until taken over by the British in 1923. During the 1920s and 1930s advances in mining spurred development and immigration. The name was changed to Zambia upon independence on 24th October 1964 (Lubilo & Child, 2010). In the late 1970s and 1980s declining copper prices, the nationalisation of copper and a prolonged drought hurt the economy. In recent years the high copper price and de-nationalisation have helped the economic recovery, but income poverty still persists and rural poverty in Zambia ranks among the highest in sub-Saharan Africa (Richardson et al., 2012). Zambia now has a mixed economy consisting of a modern urban sector that, geographically, follows the rail line and a rural agricultural sector (Central Statistical Office (CSO), Ministry of Health (MOH), Tropical Diseases Research Centre (TDRC), University of Zambia, and Macro International Inc, 2009), with copper mining contributing only 3.6% to GDP in 2011 (Central Statistical Office, 2012). In 2006, 64% of Zambians were classified as poor, with poverty most prevalent in rural areas (80%) (CSO et al., 2009).

5.1. HISTORY OF PROTECTED AREAS AND CONSERVATION IN ZAMBIA

In the 1970s and 1980s commercial poaching decimated wildlife populations in Zambia (Lubilo & Child, 2010). A workshop held in 1983, in response to this, identified poverty as the main reason for widespread poaching and recommended that local communities become involved in the management of wildlife, as well as the sharing of benefits (Lubilo & Child, 2010). Two programmes subsequently emerged; the Administrative Management and Design for Game Management Areas (ADMADE) and the Luangwa Integrated Resources and Development Project (LIRDP) (Gibson, 1999, as cited in Lubilo & Child, 2010). ADMADE was initiated in the mid-1980s and was based on revenue sharing according to a formula set by government policy, while LIRDP began in 1988 with a design similar to ADMADE (Jones, 2007). Both attempts to link wildlife revenues to rural development were largely unsuccessful as there were no specific provisions detailing community rights, there were

various revenue sharing constraints and a reliance on trophy hunting without diversification into other wildlife areas limited the potential of the projects (Jones, 2007, p. 72). The project was therefore changed in 1996 and became more focused on wildlife and introducing a greater share of income to rural communities with more local decision-making (Jones, 2007).

In Zambia's National Parks entry is usually by permit, resulting in local people largely being excluded. There are also Game Management Areas (GMAs) where licenced safari and licensed subsistence hunting are permitted (Abel & Blaikie, 1986; Richardson, Fernandez, Tschirley & Tembo, 2012) and people are allowed to live. These areas act as 'buffer zones' around the National Parks, while also supporting a viable hunting industry that is able to contribute to the national economy (Sirasiku et al., 2008, p. 26). Additional functions of the GMAs include the following: hunting areas for safari and non–safari, photographic areas supporting non-consumptive utilisation, settlement areas for local communities that also conduct agriculture amongst other economic activities. It is in the GMAs that CBNRM programmes are advocated as a method of co-managing the wildlife resources.

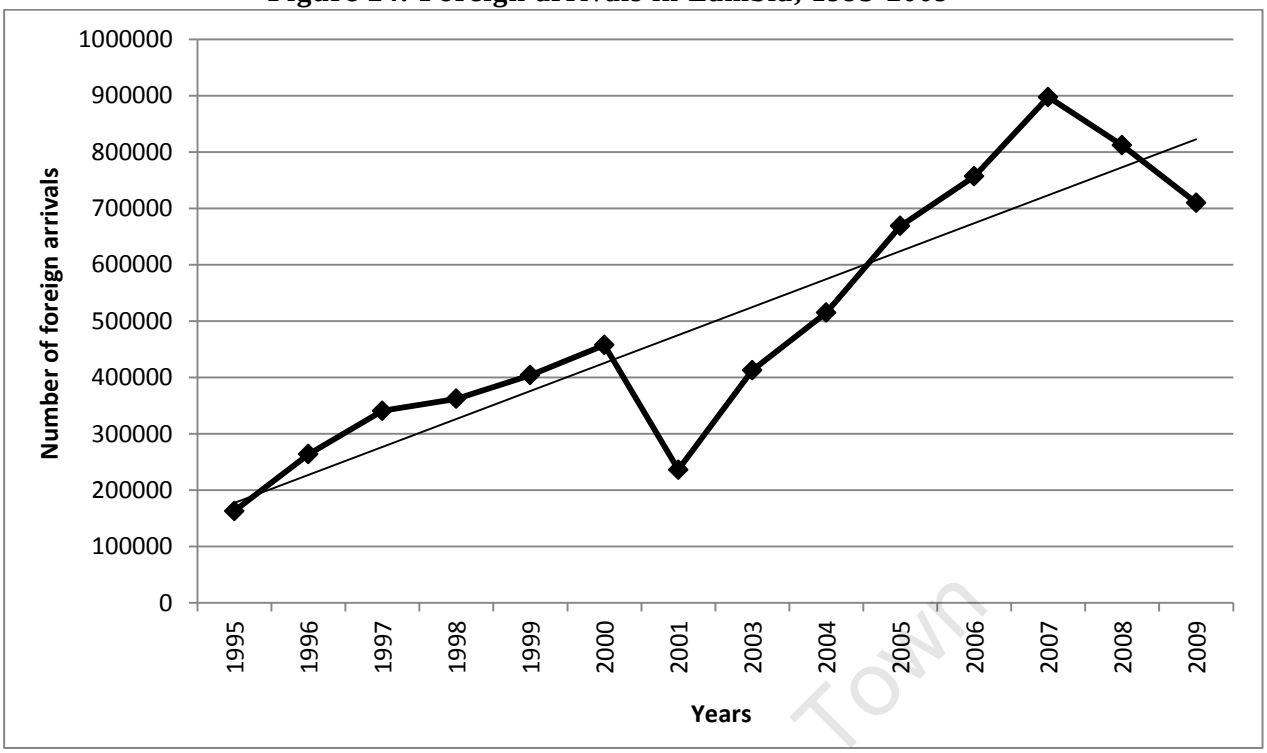
In total, there are 19 National Parks and 36 GMAs which cover over 22.4 million hectares (Ministry of Tourism, Environment and Natural Resources, 2010). The GMAs in Zambia cover 22% of the country's territory equivalent to 170 000 km² (Simasiku et al., 2008).

5.2. TOURISM IN ZAMBIA

Tourism in Zambia has retained its priority sector ranking as second after agriculture on the Government's economic development agenda (Ministry of Tourism, Environment and Natural Resources, 2010).

Figure 24 illustrates that tourism arrivals to Zambia increased over the period 1995 to 2000, but declined in 2001 and again in 2008 and 2009 (no data could be found for 2002). The Ministry of Tourism, Environment and Natural Resources report (2010) does not give any reasons for these declines. Elections held in December 2001, may have been the cause of the 2001 decline in tourism numbers and the 2008/9 decline is most likely due to the world economic crisis and declining tourism numbers worldwide.

Figure 24: Foreign arrivals in Zambia, 1995-2009



Source: Ministry of Tourism, Environment and Natural Resources, 2005 and 2010

The WTTC (2011) claims that travel and tourism was expected to generate 22 000 direct jobs in Zambia (1.4% of total employment) in 2011.

6. ZIMBABWE

Zimbabwe has a total land area of 39 million hectares, 33.3 million of which is available for agriculture. The remaining six million hectares have been reserved for national parks, wildlife reserves and urban settlements (Muchapondwa, 2003). Eighty percent of Zimbabwe is semi-arid (Child, 1995, as cited in Muchapondwa, 2003) influencing settlement patterns and the viability of agricultural production. The total estimated population of Zimbabwe in 2012 was more than 12.97 million, occurring at an average density of 33 people per square kilometre (Zimbabwe National Statistics Agency, 2012). About 70% of the population lives in rural areas and depends on subsistence agriculture.

Zimbabwe has numerous natural resources including (amongst others) coal, chromium ore, asbestos, gold, nickel, copper, iron ore and tin. Prior to the economic downturn in Zimbabwe there was a thriving agricultural industry which included (amongst others) export of the following; corn, cotton, tobacco, wheat, tea, coffee, sugarcane, peanuts and cattle. Support from the International Monetary Fund (IMF) and numerous NGOs has been suspended

because of government's arrears on past loans and the government's unwillingness to enact reforms that would assist in stabilizing the economy.

Kaulem (2006) estimated that more than 80% of the Zimbabwean population live below the poverty line. The adult literacy rate is, however, one of the highest in Africa (95.7%) (Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International, 2012), with the quality of education in urban areas still high, though private education is expensive and not affordable for most Zimbabweans.

6.1. HISTORY OF PROTECTED AREAS AND CONSERVATION IN ZIMBABWE

Previous legislation in Zimbabwe relating to wildlife on communal lands discriminated against people who had wildlife on their land by imposing the costs of conservation (HWC as well as the opportunity costs) on them rather than rewarding them for protecting the wildlife (Muchapondwa, 2003).

The Communal Lands Act of 1982 gave ownership of communal lands and resources to the state and assigned Rural District Councils (RDCs) power to regulate land use and land holding in all communal areas under their jurisdiction (Murombedzi, 2001, p. 245). According to this Act, occupation and access to communal land was in terms of customary law (Murombedzi, 2001). The National Parks and Wildlife Act (1975), as amended in 1982, gave authority over wildlife in communal areas to the RDCs, while on private/leasehold land authority went to the landowners (Frost & Bond, 2008; Murombedzi, 2001). The Act gave District Councils 'Appropriate Authority' to manage and benefit from wildlife resources in their area (Hasler, 1999). Communities have to pay a variety of taxes and charges to the RDC for the management of 'their' wildlife and they do not have the right to use the wildlife, only the right to benefit from its use by others (Murombedzi, 2001). The creation of village, ward and district wildlife management committees was an attempt to devolve authority to the local level but it did not define local rights over the wildlife resource and many communities continued to see the resources as belonging to the government or the RDC (Murombedzi, 1994, as cited in Murombedzi, 2001).

According to Frost and Bond (2008, p. 777), CAMPFIRE (communal areas management programme for indigenous resources) was designed specifically to stimulate the long-term development, management and sustainable use of all natural resources in Zimbabwe's communal areas. It was hoped that it would align land use in these agriculturally marginal

areas with the natural constraints and opportunities that were available. CAMPFIRE is an example of community conservation (defined in Appendix A). Murombedzi's 1994 study showed that most CAMPFIRE wards were, however, using their revenues to improve agricultural productivity and not to improve wildlife management (e.g. investing in anti-poaching, re-stocking, etc.) though the latter might increase future wildlife revenues (Murombedzi, 2001).

Revenue under CAMPFIRE goes to the RDCs, who then distribute a portion of this to the Ward Development Committees or the Village Development Committees (VDCs) and/or to individual households as determined by the RDC policy (Simasiku et al., 2008, p. 23). Each RDC is allowed to determine its own policy relating to the use and distribution of any funds received. According to Bond (2001) wildlife in Zimbabwe is not financially viable at the household level and, consequently, in most areas there are only low financial incentives for institutional change that might lead to the sustainable management of wildlife and wildlife habitat.

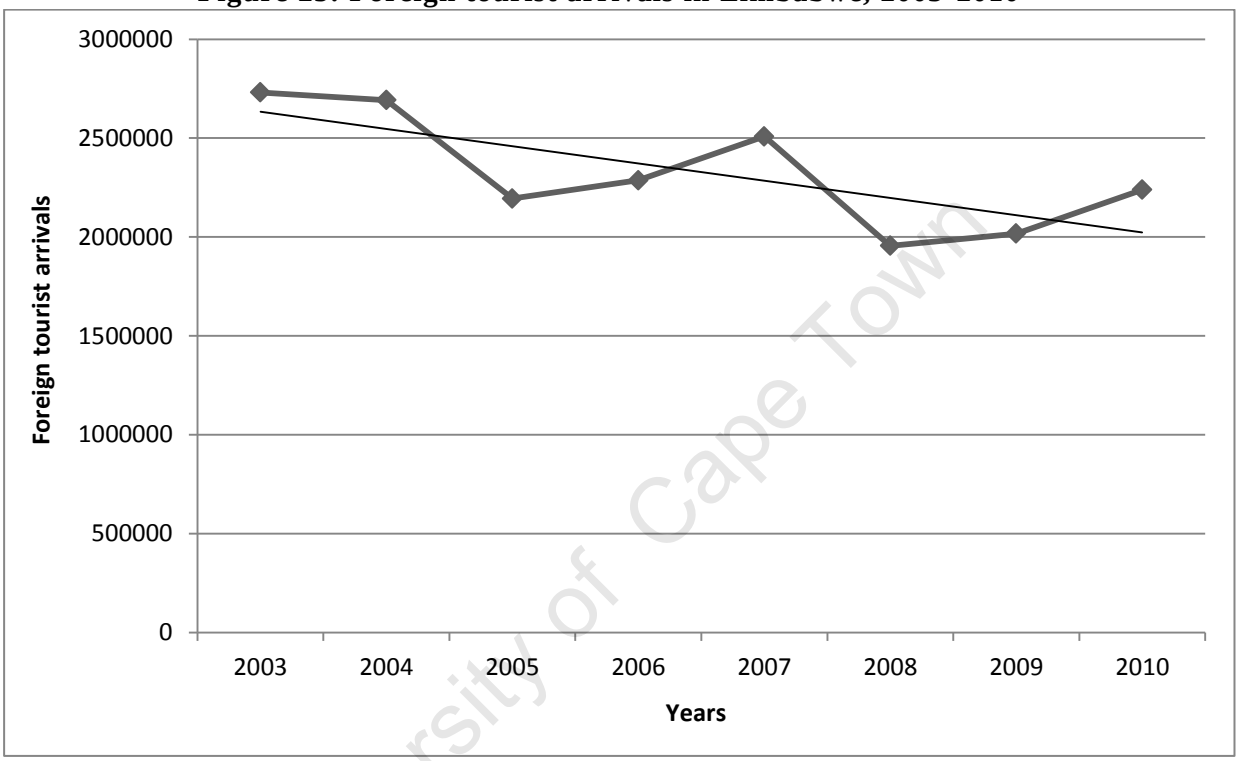
Overall, in the CAMPFIRE programme, communities were expected to be responsible for the management of wildlife and its habitat. They were however given only few legal rights over the wildlife (Bond, 2001). CAMPFIRE sought to promote rural development rather than conservation per se and only applied to areas under communal tenure (Leader-Williams & Hutton, 2005). Household-level benefits from wildlife utilization under CAMPFIRE have been highly variable, with sparsely populated wards and districts adjacent to PAs having the potential to earn more income than those which are densely populated and removed from the core biodiversity areas (Hasler, 1999). In the 1990s the direct household-level incentives from CAMPFIRE for managing wildlife and its habitat became increasingly marginal in all but a few communities when compared to other sources of income, such as agricultural production (Murombedzi, 2001 in Leader-Williams & Hutton, 2005, p. 147).

According to Frost and Bond (2006), the greatest problem with CAMPFIRE is the lack of clearly defined property rights and strong tenure at both the individual and community level. Community rights over the land and its resources vary from location to location, ranging from usufruct rights over arable land to collective rights elsewhere (Frost & Bond, 2006, p. 6). The uncertainty created by this results in some members of the community engaging in opportunistic use of resources, free-riding and investing very little in resource management.

6.2. TOURISM IN ZIMBABWE

Largely due to the political instability in Zimbabwe there has been a downward trend in the number of foreign tourist arrivals between 2003 and 2010 (See Figure 25). There has, however, been an increase from 2009 to 2010 and bed occupancies are seen to be increasing in the WS camps. This once again highlights the importance of political stability to the success of the ecotourism industry.

Figure 25: Foreign tourist arrivals in Zimbabwe, 2003-2010



Source: Zimbabwe Tourism, 2011

The WTTC (2011) expected the direct impact of travel and tourism employment in Zimbabwe in 2011 to be 26 000 jobs (2.6% of total employment) and direct industry impact contributing 3.6% of total GDP.

APPENDIX D - SAMPLE STAFF INTERVIEW SCHEDULE

ZAMBIA STAFF SURVEY

INTERVIEWER

TRANSLATED

I am a researcher associated with the University of Cape Town and Wilderness Safaris. You have been chosen to participate in a survey regarding social and economic impacts of conservation areas and various other impacts on the surrounding communities. Your answers will be voluntary and will be kept strictly confidential. You are not obliged to answer any questions and may ask the interviewer to skip a question should you wish to.

Your answers will be put together with many other answers and will be used at a highly aggregated level so that no-one will be able to single out your responses. I ask that you give answers that are honest, and to the best of your knowledge, correct, in order to ensure that the results of the study are accurate and a true reflection of the situation.

Thank you for your time.

Please sign below to consent to the following interview and to agree to give answers that are, to the best of your knowledge correct

Respondent

Please sign below to acknowledge that any information revealed in this survey will remain confidential.

Interviewer

Date:_____

Code:_____

Please sign below to acknowledge that any information revealed in this survey will remain confidential.

Translator

PERSONAL INFORMATION

1 Age

2 Gender MALE FEMALE Prefer not to Answer

3 Ethnic Group Prefer not to Answer

4 Home village

5 Home Language SPEAK READ WRITE

6 Other Languages (specify) SPEAK READ WRITE

SPEAK READ WRITE

SPEAK READ WRITE

7 Marital Status SINGLE MARRIED DIVORCED WIDOW/ER
TRADITIONAL OTHER (Specify) Long-Term Relationship

8 No. of children (incl. deceased, please specify)

9 Number of dependents (incl. children & others)

10 In what type of dwelling do you live at home:

1 : Formal dwelling with thatch roof

2 : Formal dwelling with iron roof

3 : Formal dwelling with a tiled roof

4 : Traditional dwelling thatch roof iron roof

5 : Other (specify)

11 Total no. of people living in household over the period of a year (incl. you):

12 Is the head of your household male or female? MALE FEMALE

b How old are they?

c What is their occupation/What work do they do?

13 No. of males in the household: b No. of females in the household:

14 No. of people in each age category in the household: MALE FEMALE

0-10 years

10-20 years

20-30 years

30-40 years

40-50 years

50-60 years

60 years +

15 Access to electricity in your home? YES NO

16 What do you use for lighting in your home? ELECTRICITY GAS PARAFFIN CANDLES SOLAR FIREWOOD NOTHING GENERATOR

17 What do you use to cook food? FIREWOOD GAS STOVE SOLAR CHARCOAL

18 Access to running water inside your home? YES NO

b "If NO, what type of water do you use? " BOREHOLE PUBLIC TAP RIVER DAM RAIN WELL

19 How far do you travel to get water? minutes

20 What form of toilet do you use? FLUSH TOILET PIT LATRINE BUSH

21 What do you do with your rubbish/refuse/waste? BURN BURY DUMP COUNCIL Throw in Bush

EDUCATION

22 Highest Grade Passed

23 If not completed, what is the main reason for not completing schooling? MONEY PREGNANT FAM. RESP. TOO FAR MARRIAGE FAILED LIVESTOCK ILLNESS

24 Any Further Education

25 Any Skills Training

WORK EXPERIENCE

26 What year did you start working for WS?

27 Current Position

28 Is the position? Permanent Seasonal Casual Probation Contract

29 Other positions held with WS during employment

30 Gross Monthly Salary

31 "Benefits received at work e.g. gratuities, uniform, etc." Uniform
Food Accommodation Transport home

(Please list and give average monthly value, where applicable) Medical Aid
Funeral Pension Gratuities

32 Training provided by employer (formal or on-the-job)
NO TRAINING ON-THE-JOB FORMAL

33 How do you intend to support yourself upon retirement?
Yes No Don't Know

34 Do you feel there are Job Growth Opportunities with Wilderness Safaris?
YES NO Don't Know

35 Do you think WS promotes personal growth & empowerment?
YES NO Don't Know

36 Job satisfaction Very Moderate Poor

b If 'Poor', Why?

37 Is this your first permanent (formal) job? YES NO

HOUSEHOLD INFORMATION

38 Do you engage in subsistence farming (i.e. growing food for the household to eat)?
YES NO

39 Other Household Income Sources? (e.g. livestock sales, grants, pension, etc.) Please list and give average monthly value

Value Specify if per day/month/year

Farming - cattle, goats, crops, chickens, etc.

Fishing

Crafts/Curios

Spouse/Family Income

Piece Work/Casual Labour

Grants/Pension

Other (Specify)

40 AVERAGE MONTHLY HOUSEHOLD EXPENSES

Accommodation (Rent) per month

Food per month

Education/Schooling (School fees)- specify if per term or month

Electricity per month

Water (specify if per month or per year)

Telephone/Airtime per month

Alcohol/Cigarettes A: C: per month

Childcare/Domestic Help/Casual Labour per month

Paraffin/Gas/Candles/Batteries per month

Cleaning Materials (e.g. Omo, Floor Polish, etc.) per month

Personal Items (Toothpaste, deodrant, etc.) per month

Transport/Taxis per month

Fuel expenses (diesel, petrol, etc.) per month

Municipal/Service Charges per month

Dependents - over & above food, education, etc. per month

Accounts/Instalments (name and specify amount)

Savings per month

Loans per month For?

Burial Policy/Funeral Plan/Life Insurance per month

Medical Expenses/Medical Aid - clinic, medicines, etc. per year

Clothes per year

Other Expenses (list) - e.g. pension, etc. per month

41 Does your household own any of the following: "If YES, number:"

Motor Vehicle/Car YES NO

Television YES NO

Mobile Phone YES NO

Bicycle YES NO

Radio YES NO

Computer YES NO

Cattle YES NO

Goats/Chickens	YES	NO	G:		C:	
Stove	YES	NO	GAS	ELECTRIC	SOLAR	
Fridge	YES	NO	GAS	ELECTRIC	SOLAR	

HEALTH AND SAFETY

42 Would you say your health is? Excellent Good Average Poor Very Poor

43 Any Health Issues (e.g diabetes, high blood pressure, etc.)

44 Do you know your HIV status? YES NO

b. If YES, when was your last test (year)?

45 Do you know about WS's HIV/AIDS programme? YES NO

b "If YES, do you think it helps the staff?" YES NO Why?

46 Do you feel safe from crime where you live at home? VERY MODERATELY NOT VERY NOT AT ALL

CONSERVATION AREA

47 Do you think the lodges/camps in South Luangwa provide jobs for local people?
YES NO Don't Know

48 Are any of your family employed in any tourism- or conservation related business?
YES NO

b Who are they employed by? e.g National Parks, Private, etc.

49 Do you think the lodges/camps in South Luangwa have helped to reduce poverty in the area (made local people less poor)?
YES NO Don't Know

50 Has there been any positive change (anything good) in the surrounding villages as a result of the WS & other tourism camps in South Luangwa?
YES NO Don't Know

51 Which of the following do you think currently provides the most jobs in the area?
Crafts Tourism Fishing Agriculture Hunting

Cattle/Goat Farming Government Don't Know

52 Which of the following do you think benefits/helps the local people/community the most?
Crafts Tourism Fishing Agriculture Hunting

Cattle/Goat Farming Government Don't Know

53 Do you or any of your family collect wood/plants or hunt or snare animals in the Park? YES NO

54 Do you know of any Community Projects or work that WS does to help the local children or people? YES NO

b If YES, please list

55 Do you think it is important to conserve/ look after animals, water, plants, etc.?"

YES NO Don't Know

b Why?

56 Do you have any problems with wild animals in your home village?

YES NO

57 If YES, what animals? LION ELEPHANT HYAENA CROCODILE LEOPARD BABOON HIPPO BUFFALO OTHER (SPECIFY)

58 Have you ever been into the Park other than for work? YES NO

b. If YES, why?

59 Would you like to visit the Park with your family? YES NO

b Why?

Thank you for your time

APPENDIX E - SAMPLE NON-STAFF INTERVIEW SCHEDULE

SOUTH LUANGWA NON-STAFF SURVEY

INTERVIEWER

TRANSLATED

I am a researcher associated with the University of Cape Town and Wilderness Safaris. You have been chosen to participate in a survey regarding social and economic impacts of conservation areas and various other impacts on the surrounding communities. Your answers will be voluntary and will be kept strictly confidential. You are not obliged to answer any questions and may ask the interviewer to skip a question should you wish to.

Your answers will be put together with many other answers and will be used at a highly aggregated level so that no-one will be able to single out your responses. I ask that you give answers that are honest, and to the best of your knowledge, correct, in order to ensure that the results of the study are accurate and a true reflection of the situation.

Thank you for your time.

Please sign below to consent to the following interview and to agree to give answers that are, to the best of your knowledge correct

Respondent

Please sign below to acknowledge that any information revealed in this survey will remain confidential.

Interviewer

Date:_____

Code:_____

Please sign below to acknowledge that any information revealed in this survey will remain confidential.

Translator

SOUTH LUANGWA NON-STAFF SURVEY

PERSONAL INFORMATION

1 Age (or year/date of birth)

2 Gender MALE FEMALE Prefer not to Answer

3 Ethnic Group Prefer not to Answer

4 Home village

5 Home Language SPEAK READ WRITE

6 Other Languages (specify) SPEAK READ WRITE

SPEAK READ WRITE

SPEAK READ WRITE

7 Marital Status Traditional Marriage MARRIED DIVORCED

WIDOW/ER Long-Term Relationship SINGLE
OTHER (Specify)

8 No. of children (incl. deceased, please specify)

9 Number of dependents (incl. children & others)

10 In what type of dwelling do you live at home:

1 : Formal dwelling with thatch roof

2 : Formal dwelling with iron/asbestos roof

3: Formal dwelling with tiled roof

4 : Traditional dwelling thatch roof iron/asbestos roof

5 : Other (specify)

11 Total no. of people living in household over the period of a year (incl. you):

12 Is the head of your household male or female? MALE FEMALE

b How old are they? c What is their occupation/What work do they do?

13 No. of males in the household: b No. of females in the household:

14 No. of people in each age category in the household:

	MALE	FEMALE
0-10 years		
11-20 years		
21-30 years		
31-40 years		
41-50 years		
51-60 years		
61 years +		

15 Access to electricity in your home? YES NO

16 What do you use for lighting in your home? ELECTRICITY GAS PARAFFIN CANDLES SOLAR FIREWOOD NOTHING GENERATOR

17 What do you use to cook food? FIREWOOD GAS STOVE SOLAR CHARCOAL

18 Access to running water inside your home? YES NO

b "If NO, what type of water do you use? " BOREHOLE OUTSIDE PUBLIC TAP WELL TAP RIVER DAM/LAKE RAIN

19 How far do you travel to get water? (in minutes) minutes

20 What form of toilet do you use? FLUSH TOILET PIT LATRINE BUSH

21 What do you do with your rubbish/refuse/waste? COUNCIL DUMP BURN BURY Throw in the BUSH

EDUCATION

22 Highest Grade/Standard Passed

23 If not completed, what is the main reason for not completing schooling?
MONEY PREGNANT FAM RESP. ILLNESS TOO FAR MARRIAGE NOT APPLICABLE LIVESTOCK CARER

24 Any Further Education

25 Any Skills or Skills Training

WORK EXPERIENCE (if employed then complete Q 26 - Q 34 & then skip to Q 37)

26 Current employer (if unemployed go to No. 34)

27 Current Position

28 When did you start?

29 "Is the position? (if not permanent, include Q 33)" Permanent Seasonal Casual Probation Contract

30 Gross Monthly Salary Nett Monthly Salary

31 "Benefits received at work e.g. gratuities, uniform, etc." Uniform Food Accommodation Transport home Pension Medical Aid

Gratuities (give amt.)

32 Training provided by employer On-the-job Formal No training

33 How do you intend to support yourself upon retirement? Don't Know

34 Have you ever had a permanent job before? YES NO

35 If unemployed, how long have you been unemployed?

36 If unemployed, why are you unemployed?

Would like to work, but you can't find a job?

Can't work (give reason) -e.g. sick, too old, looking after family

Don't want to work

Self-employed

Other (specify)

HOUSEHOLD INFORMATION

37 Other Household Income Sources?	Value (in Rands)	Specify if per day/month/year
Farming - cattle, goats, crops, chickens		
Fishing		
Crafts/Curios		
Spouse/Family Income		
Piece work/Casual Labour		
Grants/Pension - disability, child grant, pension		
Other (Specify)		

38 Do you engage in subsistence farming (i.e. grow food at home to eat)?

YES NO

AVERAGE MONTHLY HOUSEHOLD EXPENSES

	Value
39 Accommodation (Rent)	per month

Food per month

Education/Schooling (School fees) - specify if per term or month

Electricity per month

Water (specify if per month or per year)

Telephone/Airtime per month

Alcohol/Cigarettes A: C: per month

Childcare/Domestic Help/Casual Labour per month

Paraffin/Gas/Candles/Batteries per month

Cleaning Materials (e.g. Omo, Floor Polish (Cobra), etc.) per month

Personal Items (Toothpaste, deodrant, Vaseline, Dawn, etc.) per month

Transport/Taxis per month

Fuel expenses (diesel, petrol, etc.) per month

Municipal/Service Charges per month

Dependents - over & above food, education, etc. per month

Accounts/Instalments (name and specify amount)

Loans For?

Savings per month

Burial/Funeral Policy or Life Insurance per month

Medical Expenses - clinic, medicines, etc. (annual amt.) per year

Clothes (annual amount) per year

Other Expenses (list) per month

40 Does your household own any of the following: "If YES, Number"

Motor Vehicle/Car YES NO

Television YES NO

Mobile Phone YES NO

Bicycle YES NO

Radio YES NO

Computer YES NO

Cattle YES NO

Goats/Chickens YES NO G: C:

Stove YES NO GAS ELECTRIC SOLAR

Fridge YES NO GAS ELECTRIC SOLAR

HEALTH AND SAFETY

41 Would you say your health is? Excellent Good Average Poor Very Poor

b Any Health Issues (e.g diabetes, high blood pressure, asthma, etc.)

42 Do you know your HIV status? YES NO

b. If YES, when was your last test (year)?

43 Do you feel safe from crime where you live at home? VERY MODERATELY NOT VERY NOT AT ALL

WILDERNESS SAFARIS

44 Have you heard of Wilderness Safaris? YES NO

If NO, please go to No. 47

b If YES, do you know anyone who works for Wilderness Safaris?

YES NO

45 If YES to No. 44 a, what is your opinion of Wilderness Safaris?

a	Good for jobs	YES	NO	Don't Know
b	Brings tourists to the area	YES	NO	Don't Know
c	Helps to protect the animals and plants	YES	NO	Don't Know
d	Helps communities in the area	YES	NO	Don't Know
e	Good to work for	YES	NO	Don't Know
f	Could do more for the communities	YES	NO	Don't Know
g	Other (specify)			

46 Do you know of any Community Projects or work that WS does to help the local children or people?

YES NO b If YES, please list

47 Has there been any positive change (anything good) in the villages as a result of Kalamu & the other tourism camps in South Luangwa? YES NO Don't Know

48 Do you think Kalamu & other tourism camps in South Luangwa create jobs for local people? YES NO Don't Know

49 Do you think that Kalamu & other tourism camps have helped to reduce poverty in the area (made local people less poor)? YES NO Don't Know For Some

CONSERVATION AREA

50 Are you or any of your family employed in any tourism- or conservation-related business? YES NO

b Who are they employed by? e.g. National Parks, Private, etc.

51 Which of the following do you think currently provides the most jobs in this area?
Tourism Fishing Agriculture Hunting

Crafts Government Cattle/Goat Farming Don't Know

52 Which of the following do you think benefits/helps the community the most in this area?
Tourism Fishing Agriculture Hunting

Crafts Government Cattle/Goat Farming Don't Know

53 Do you or any of your family collect wood/plants or snare animals in the Park?
`
YES NO

54 Do you think it is important to conserve/look after animals, water, plants, trees, etc.?
YES NO Don't Know b Why?

55 Do you have any problems with wild animals in your home village?

YES NO

b If YES, what animals? LION ELEPHANT HYAENA CROCODILE
BABOONS HIPPO BUFFALO MONKEYS OTHER (Specify)

56 Have you ever been into the Park? YES NO

b If YES, why? School trip For Pleasure To visit family To Snare
To work To collect wood Used to live there
Passing Through

57 Would you like to visit the Park with your family? YES NO
b Why?

Thank you for your time

APPENDIX F - DATA SUMMARY FOR THE WHOLE SAMPLE

As there are a number of different combinations for data analysis and comparisons, this chapter gives a breakdown of the main demographic data per country, for staff and non-staff respondents, including averages. Discrepancies in the total number of interview schedules in various categories is a result of the fact that there was either missing data or the respondent did not answer the question or know the answer.

In some of the earlier interview schedules there were some questions not included and therefore data for these questions is missing; this is indicated in the analysis.

Table 57 gives a breakdown of the camps, communities and ethnic groups surveyed in order to contextualise the remainder of the chapter and the associated data analysis.

Table 57: The camps, communities and ethnic groups surveyed in each country

Country	List of camps surveyed[1]	Land ownership	List of communities surveyed	Ethnic groups surveyed	Associated protected/conservation area
Botswana	Duba Plains, Vumbura Plains, Little Vumbura	Kwedi Concession where camps situated is owned by the Okavango Community Trust (*Community* concession)	Okavango Community Trust (OCT) villages – Seronga, Gunotsoga, Beetsha, Eretsha, Gudigwa	Bayei, Hambukushu, Basarwa, Bakgalagadi	Okavango Delta
Malawi	Mvuu Camp, Mvuu Wilderness Lodge	National Parks owns the land (*Government*)	Balaka District, bordering Liwonde National Park	Lomwe, Yao, Nyanja, Tumbuka, Tonga	Liwonde National Park
Namibia	Skeleton Coast Camp	Ministry of Environment and Tourism (MET) runs Skeleton Coast National Park (*Government*). *Voluntary community levies* are paid to the four adjacent conservancies.	Okondjombo Conservancy; Purros Conservancy; Sanitatas Conservancy; Orupembe Conservancy	Herero, Himba, Damara, Riemvasmaker	Skeleton Coast National Park
	Palmwag Lodge; Doro Nawas Lodge; Damaraland Camp	For Palmwag Lodge: Ministry of Environment and Tourism (MET) as well as the Big Three Conservancies (*government & conservancy payments)*. For Doro Nawas Camp a *joint venture* with the Doro !Nawas Conservancy. For Damaraland Camp: a *joint venture* with Torra Conservancy	Torra, Anabeb and Sesfontein Conservancies		Palmwag Concession area
South Africa	Rocktail Beach Camp	iSimangaliso Wetland Park owns the land. *Joint venture partnership* between WS & the Mpukane Community	Mpukane Community	Zulu	iSimangaliso Wetland Park
	Pafuri Camp	*Tripartite agreement* between the Makuleke community, Wilderness Safaris and South African National Parks (C*ommunity, private sector & government*)	Three villages in the Makuleke community	Tsonga	Kruger National Park
Zambia	Kalamu Lagoon Camp	National Parks owns the land (G*overnment)*	Villages in the Malama Chiefdom adjacent to South Luangwa National Park	Kaonde, Senga, Chewa, Ngoni, Bemba & Nyanja	South Luangwa National Park
Zimbabwe	Davisons Camp, Makalolo Plains, Little Makalolo & Linkwasha	National Parks owns the land (*Government)*	Villages in Tsholotsho District adjacent to Hwange National Park	Ndebele, Kalanga, Lozi, Shona	Hwange National Park

[1]For more information on the camps surveyed, see www.wilderness-safaris.com

1. DEMOGRAPHIC INFORMATION RELATING TO THE RESPONDENTS

Demographic data is important to get an understanding of the respondents and, from there, to contextualise the remainder of the study and data analysis. A combination of Mann-Whitney U tests and independent sample t-tests are used in this section.

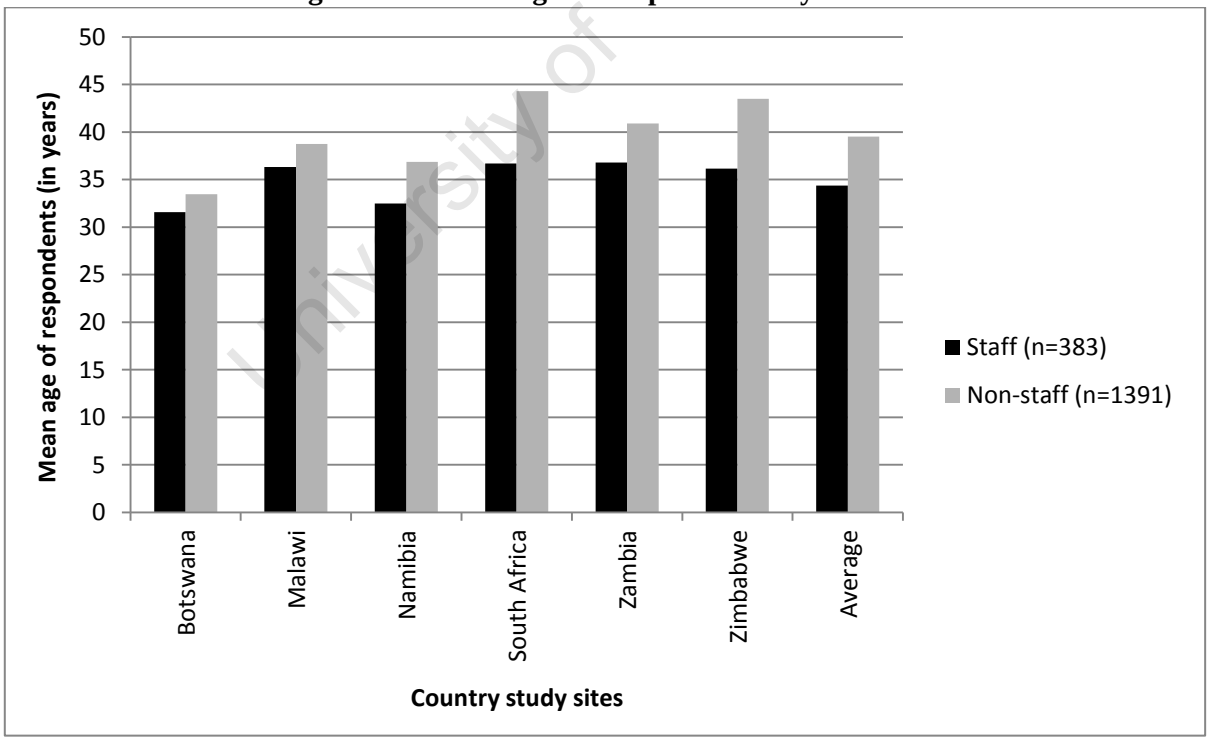
1.1. AVERAGE AGE OF RESPONDENTS (IN YEARS)

Table 58: Average age of respondents (in years)

National group sampled	Staff (n=383)	Non-staff (n=1391)	Statistical significance	Average (n=1774)
Botswana	31.57 (min. 21, max. 55)	33.45 (min. 17, max. 101)	NOT SIGNIFICANT	32.93 (min 17, max. 101)
Malawi	36.30 (min. 20, max. 66)	38.73 (min. 15, max. 98)	NOT SIGNIFICANT	38.17 (min. 15, max. 98)
Namibia	32.49 (min. 20, max. 48)	36.84 (min. 15, max. 107)	NOT SIGNIFICANT	35.85 (min. 15, max. 107)
South Africa	36.70 (min. 23, max. 66)	44.30 (min. 16, max. 87)	U = 7388, p < .05	43.11 (min. 16, max. 87)
Zambia	36.80 (min. 26, max. 47)	40.88 (min. 19, max. 88)	NOT SIGNIFICANT	40.13 (min. 19, max. 88)
Zimbabwe	36.15 (min. 21, max. 63)	43.47 (min. 17, max. 90)	U = 4651, p < .05	41.96 (min. 17, max. 90)
Average	**34.35 (min. 20, max. 66)**	**39.53 (min. 15, max. 107)**	**U = 233719, p < .001**	**38.41 (min. 15, max. 107)**

There was a statistical difference found between the mean age of staff respondents (M=34.35) and the mean age of the non-staff respondents (M=39.53): [U = 233719, p < .001].

Figure 26: Mean age of respondents by location



Figures 27 to 30 provide various graphical representations of the age-related data.

Figure 27: Total sample: Age categories by location

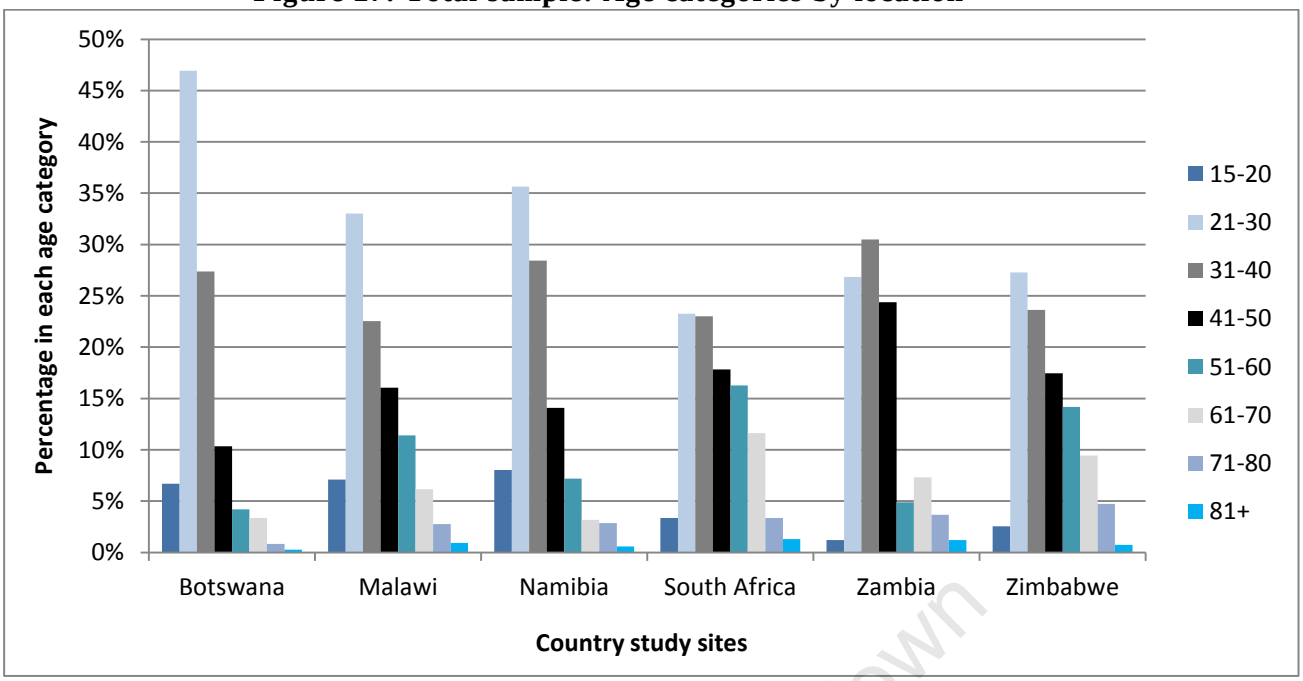


Table 59: Age groups by location

Age groups	15-20	21-30	31-40	41-50	51-60	61-70	71-80	81+	Total
Botswana	7%	47%	27%	10%	4%	3%	1%	0%	**100%**
Malawi	7%	33%	23%	16%	11%	6%	3%	1%	**100%**
Namibia	8%	36%	28%	14%	7%	3%	3%	1%	**100%**
South Africa	3%	23%	23%	18%	16%	12%	3%	1%	**100%**
Zambia	1%	27%	30%	24%	5%	7%	4%	1%	**100%**
Zimbabwe	3%	27%	24%	17%	14%	9%	5%	1%	**100%**

Figure 28: Non-staff sample only: Age categories by location

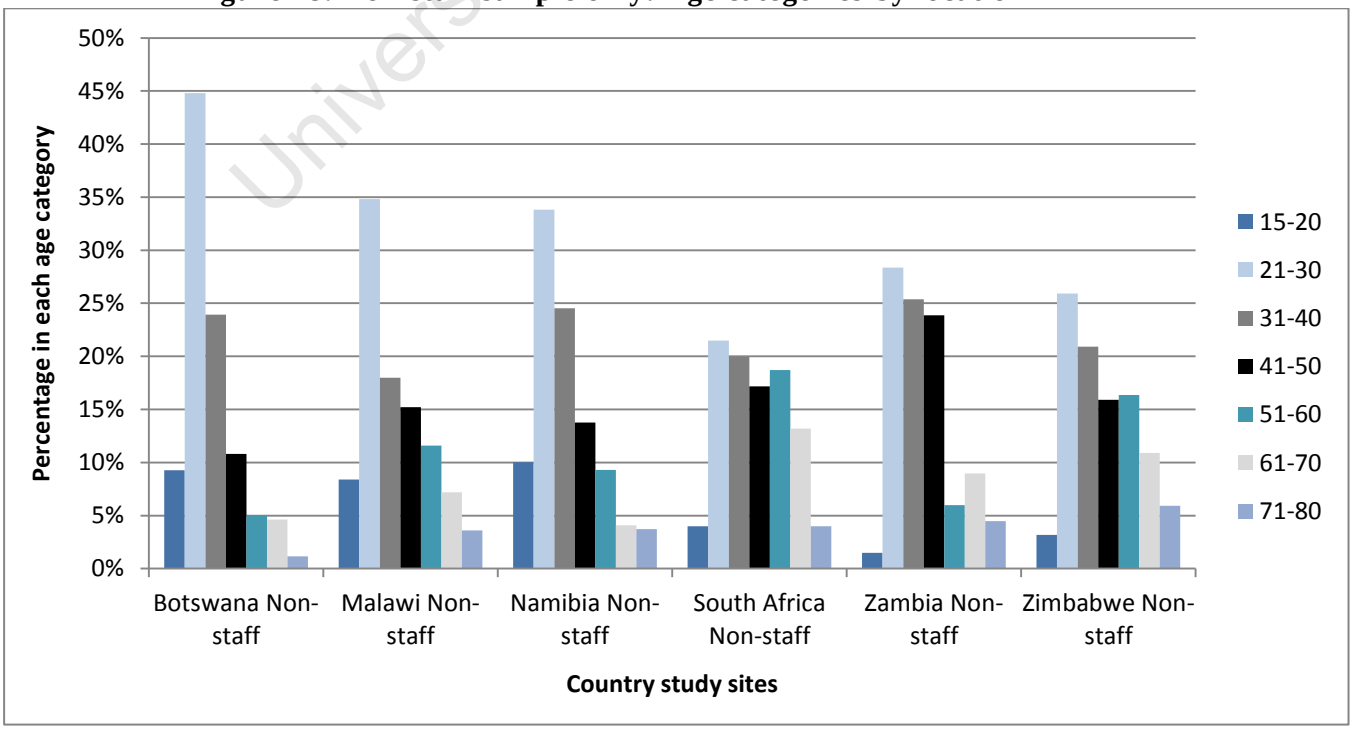


Figure 29: Staff sample only: Age categories by location

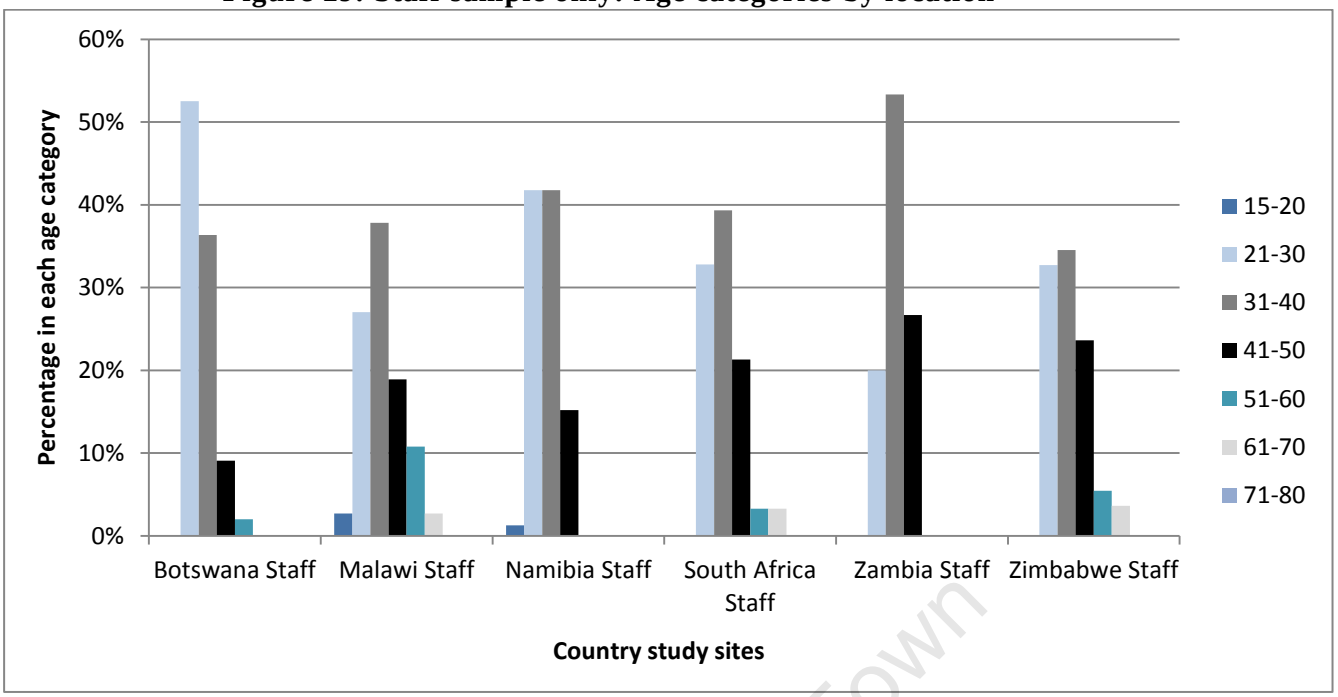
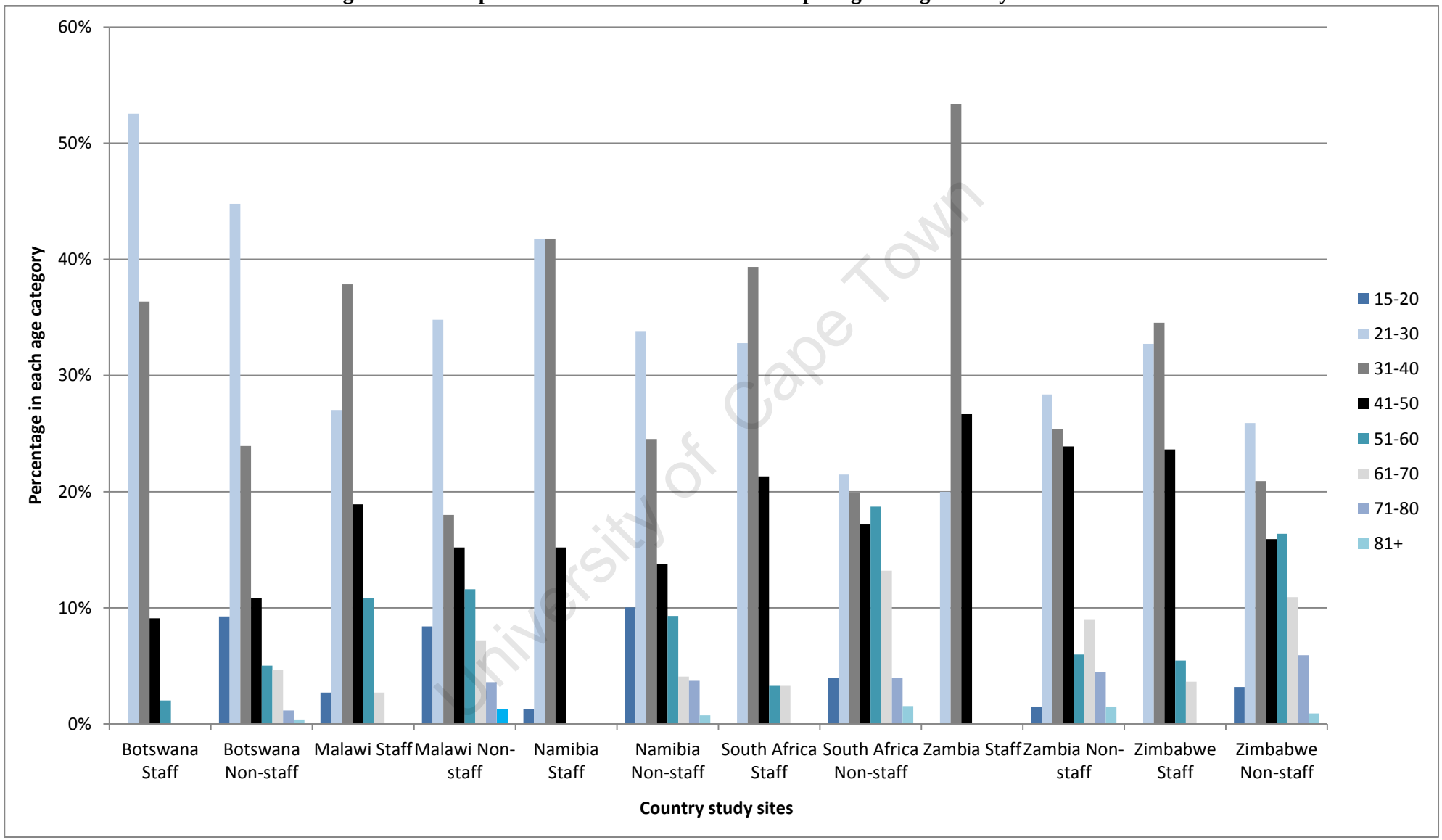


Figure 30: Comparison: Staff and non-staff sample age categories by location



1.2. GENDER BREAKDOWN OF THE RESPONDENTS

The gender breakdown of respondents shows that, on average, for the staff interviews there were more males (61%) than females (38%) and for the non-staff interviews there were more females (60%) than males (40%). This is in line with the trend in rural African areas for men to seek employment and women to remain in the rural areas to care for families, livestock and crops (Bryceson, 1999). Socio-economic data was, however, largely collected at a household level, so should not have been impacted by the gender differences.

Table 60: Gender breakdown of the respondents by location (male:female)

National group sampled	Staff (n=385)	Non-staff (n=1400)	Average (n=1785)
Botswana	46%:54%	43%:57%	44%:56%
Malawi	88%:12%	39%:61%	50%:50%
Namibia	40%:59%	55%:45%	51%:48%
South Africa	39%:61%	31%:69%	33%:67%
Zambia	100%:0%	27%:73%	40%:60%
Zimbabwe	100%:0%	35%:64%	49%:51%
Average	**61%:38%**	**40%:60%**	**45%:55%**

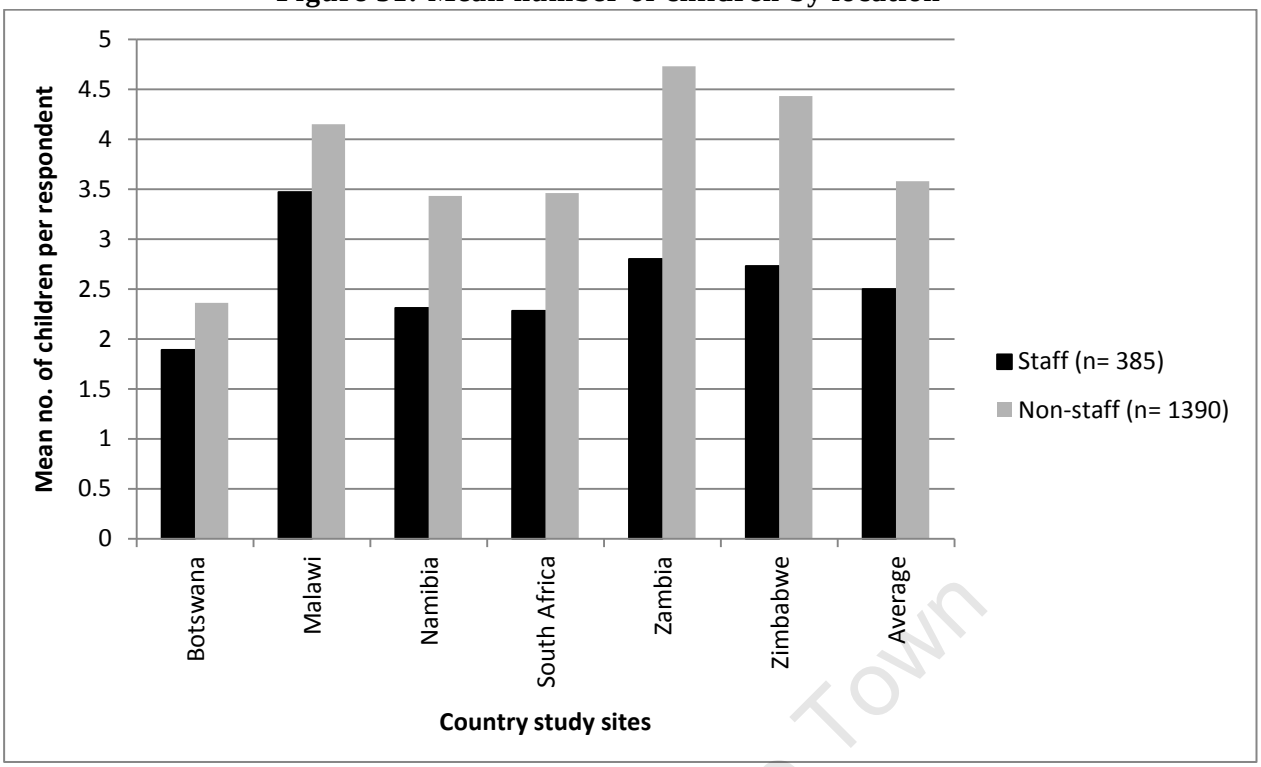
The next sections give a breakdown of the statistics relating to the number of children and the number of dependents of respondents. Dependents are those people who the respondent was supporting; they may or may not be direct family, but were supported by the respondent through buying food, paying for education, clothes, etc. and supporting them financially in whatever way was necessary.

1.3. NUMBER OF CHILDREN

Table 61: Mean number of children by location

National group sampled	Staff (n=385)	Non-staff (n=1390)	Statistical significance	Average (n=1775)
Botswana	1.89 (min. 0, max. 9)	2.36 (min. 0, max. 10)	NOT SIGNIFICANT	2.23 (min 0, max. 10)
Malawi	3.47 (min. 0, max. 10)	4.15 (min. 0, max. 23)	NOT SIGNIFICANT	3.99 (min. 0, max. 23)
Namibia	2.31 (min.0, max. 10)	3.43 (min. 0, max. 32)	NOT SIGNIFICANT	3.17 (min. 0, max. 32)
South Africa	2.28 (min. 0, max. 10)	3.46 (min. 0, max. 20)	$U = 7113.5$, $p < .001$	3.27 (min. 0, max. 20)
Zambia	2.80 (min. 0, max. 6)	4.73 (min. 0, max. 10)	$U = 286$, $p < .05$	4.38 (min. 0, max. 10)
Zimbabwe	2.73 (min. 0, max. 7)	4.43 (min. 0, max. 25)	$U = 4071.5$, $p < .001$	4.08 (min. 0, max. 25)
Average	**2.50 (min. 0, max. 10)**	**3.58 (min. 0, max. 32)**	**$U = 216\ 550.5$, $p < .001$**	**3.35 (min. 0, max. 32)**

Figure 31: Mean number of children by location



There was a significant statistical difference found between the mean number of children of staff respondents (M=2.5) and non-staff respondents (M=3.58) [t(954.275)= -8.539, p<0.05].

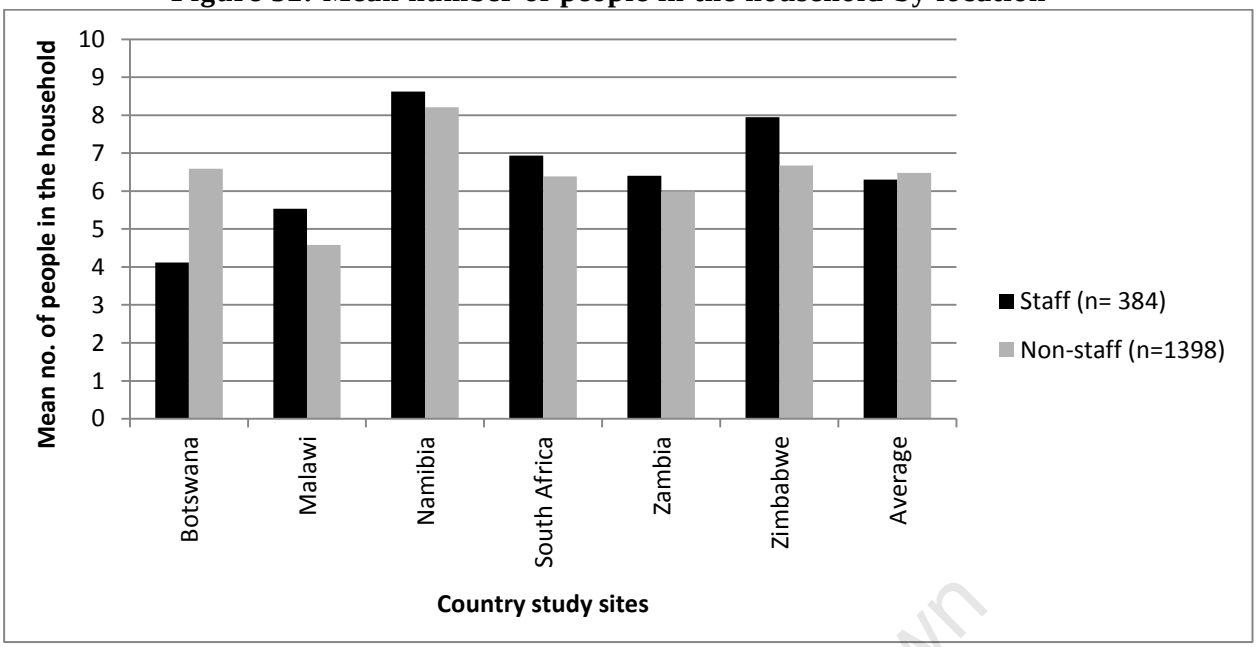
1.4. NUMBER OF PEOPLE IN THE HOUSEHOLD

Table 62: Number of people in the household

National group sampled	Staff (n=384)	Non-staff (n=1398)	Statistical significance	Average (n= 1782)
Botswana	4.12 (min. 1, max. 20)	6.59 (min. 1, max. 36)	U = 7714, p < .05	5.91 (min 1, max. 36)
Malawi	5.53 (min. 1, max. 12)	4.58 (min. 1, max. 13)	U = 6882.5, p < .05	4.80 (min. 1, max. 13)
Namibia	8.62 (min. 1 max. 35)	8.21 (min. 1, max. 75)	U = 9295.5, p < .05	8.30(min. 1, max. 75)
South Africa	6.93 (min. 1, max. 16)	6.39 (min. 1, max. 29)	NOT SIGNIFICANT	6.48 (min. 1, max. 29)
Zambia	6.4 (min. 1, max. 12)	5.99 (min. 1, max. 16)	NOT SIGNIFICANT	6.06 (min. 1, max. 16)
Zimbabwe	7.05 (min. 2, max. 15)	6.67 (min. 1, max. 30)	NOT SIGNIFICANT	6.75 (min. 1, max. 30)
Average	**6.3 (min. 1, max. 35)**	**6.48 (min. 1, max. 75)**	**NOT SIGNIFICANT**	**6.44 (min. 1; max. 75)**

There was no statistical difference found between the mean number of people in total staff (M=6.3) and total non-staff (M=6.48) households.

Figure 32: Mean number of people in the household by location



1.5. GENDER OF THE HOUSEHOLD HEAD

For the total sample, the gender of the household head was a statistically significant variable in terms of the gender of the respondent. A higher percentage of male respondents (86%) had a male household head. Fifty-one percent of the female respondents had a female household head. For the whole sample, the average age for respondents with a male household head was 38.09 years and with a female household head it was 39.20 years.

Female household heads were, on average, older (M=49.82) than male household heads (M=44.72). This difference was statistically significant [t(1124.962)= -6.339, $p<0.05$]. There was little difference between the mean number of years of education of male household heads (M=6.57) and female household heads (M=6.32).

When the group is divided into staff and non-staff respondents, for both staff and non-staff respondents there was also a statistical difference between the gender of the respondent and the gender of the household head. In both groups, more male respondents had male household heads. In both groups the female households heads were, on average, older (M=49.75 for non-staff and M=50.11 for staff) than the male household heads (M=45.43 for community and M=42.26 for staff).

For the staff respondents only, female household heads had, on average, a higher mean number of years of education (M=9.86) than male household heads (M=8.80). This difference was statistically significant [t(332.481)= -3.633]. For staff respondents only, the

mean age of female household heads was 50.11 years and male household heads was 42.26. This was also statistically significant [t(184.189)= - 4.410].

Table 63: Gender breakdown of the household head by location (male:female)

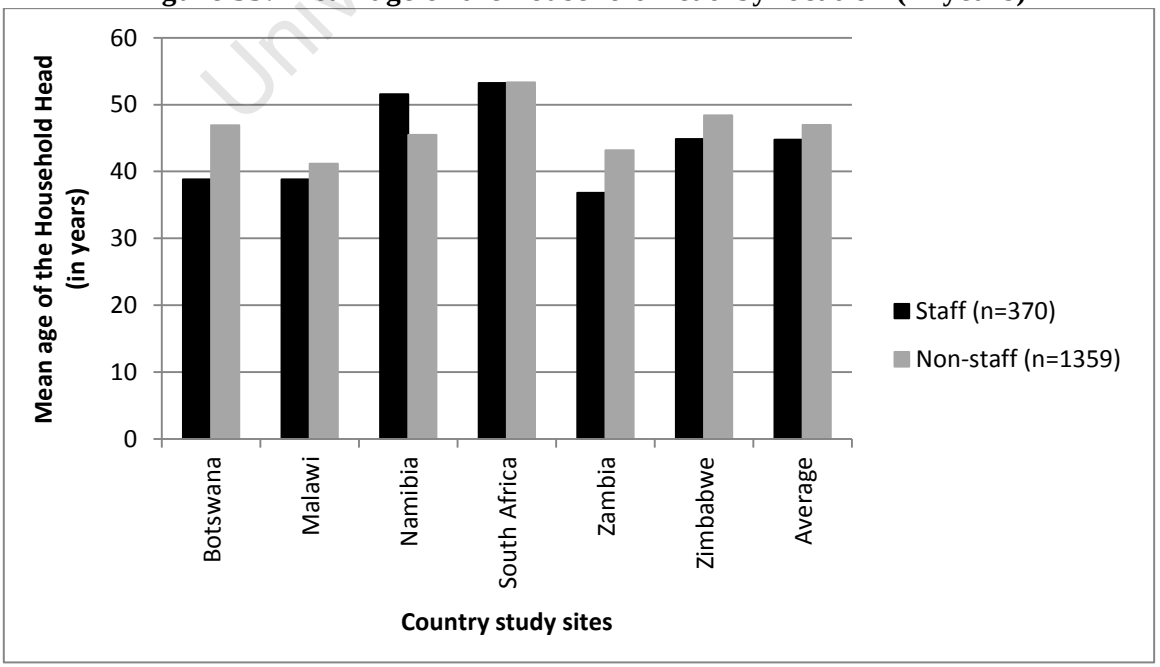
National group sampled	Staff (n=385)	Non-staff (n=1400)	Average (n=1789)
Botswana	46%:40%	43%:57%	54%:42%
Malawi	93%:7%	78%:22%	82%:19%
Namibia	51%:49%	57%:42%	55%:44%
South Africa	57%:43%	62%:37%	62%:38%
Zambia	100%:0%	69%:31%	74%:26%
Zimbabwe	87%:13%	69%:31%	73%:27%
Average	**66%:31%**	**65%:35%**	**65%:34%**

1.6. AGE OF HOUSEHOLD HEAD

Table 64: Mean age of the household head by location (in years)

National group sampled	Staff (n=370)	Non-staff (n=1359)	Statistical significance	Average (n=1729)
Botswana	38.85 (min. 23, max. 70)	46.91 (min. 18, max. 101)	U = 7748.5, p < .001	44.35 (min 18, max. 101)
Malawi	38.81 (min. 20, max. 72)	41.19 (min. 18, max. 98)	NOT SIGNIFICANT	40.64 (min. 18, max. 98)
Namibia	51.54 (min.20, max. 90)	45.50 (min. 18, max. 107)	U = 8151.5, p < .05	46.92 (min. 18, max. 107)
South Africa	53.23 (min. 23, max. 89)	53.32 (min. 21, max. 87)	NOT SIGNIFICANT	53.30 (min. 21, max. 89)
Zambia	36.80 (min. 26, max. 47)	43.16 (min. 19, max. 88)	NOT SIGNIFICANT	42.00 (min. 19, max. 88)
Zimbabwe	44.85 (min. 21, max. 80)	48.41 (min. 18, max. 90)	NOT SIGNIFICANT	47.70 (min. 18, max. 90)
Average	**44.76 (min. 20, max. 90)**	**46.98 (min. 18, max. 107)**	**U = 229 608, p < .05**	**46.51 (min. 18, max. 107)**

Figure 33: Mean age of the household head by location (in years)



1.7. ETHNIC GROUP OF RESPONDENTS

There were more than 40 different ethnic groups surveyed in the six countries.

Table 65: Ethnic groups of staff and non-staff respondents by location

National group sampled	Staff	Non-staff
Botswana	Hambukushu (41%); Bayei (28%); Basarwa (5%) Others: Bakgalagadi; Kalanga; Shona	Hambukushu (43%); Bayei (33%); Basarwa (18%) Others: Senga; Bakgalagadi; Bukakwe; Mokgalla; Makgatla
Malawi	Lomwe (35%); Yao (32%); Chichewa (12%); Nyanja (11%) Others: Nsena; Tumbuka	Yao (53%); Lomwe (34%); Chichewa (5%); Nyanja (3%); Nsena (2%) Others: Tonga; Tumbuka; Ngoni; Mang-anj
Namibia	Damara (37%); Riemvasmaker (21%); Herero (16%); Himba (10%); Ovambo (5%) Others: Kavango; Nama; Shona; Subia	Himba (36%); Damara (29%); Herero (20%); Riemvasmaker (11%) Others: Ovambo
South Africa	Tsonga (53%); Zulu (48%)	Tsonga (71%); Zulu (28%); Venda (1%); Pedi (0.3%)
Zambia	Kunda (60%); Nyanja (20%) Others: Bemba/Kunda; Ngoni; Tonga	Kunda (75%); Senga (8%); Chichewa (6%) Others: Ngoni; Bemba; Nyanja; Tonga
Zimbabwe	Ndebele (29%); Tonga (29%); Shona (22%); Nambia (14%) Others: Rozvi; Nyanja; Tsonga	Ndebele (70%); Kavango (12%); Lozi (3%); Senga (3%) Others: Nambia; Fengu; Kalanga; Sotho; Tonga

2. HOUSEHOLD CHARACTERISTICS

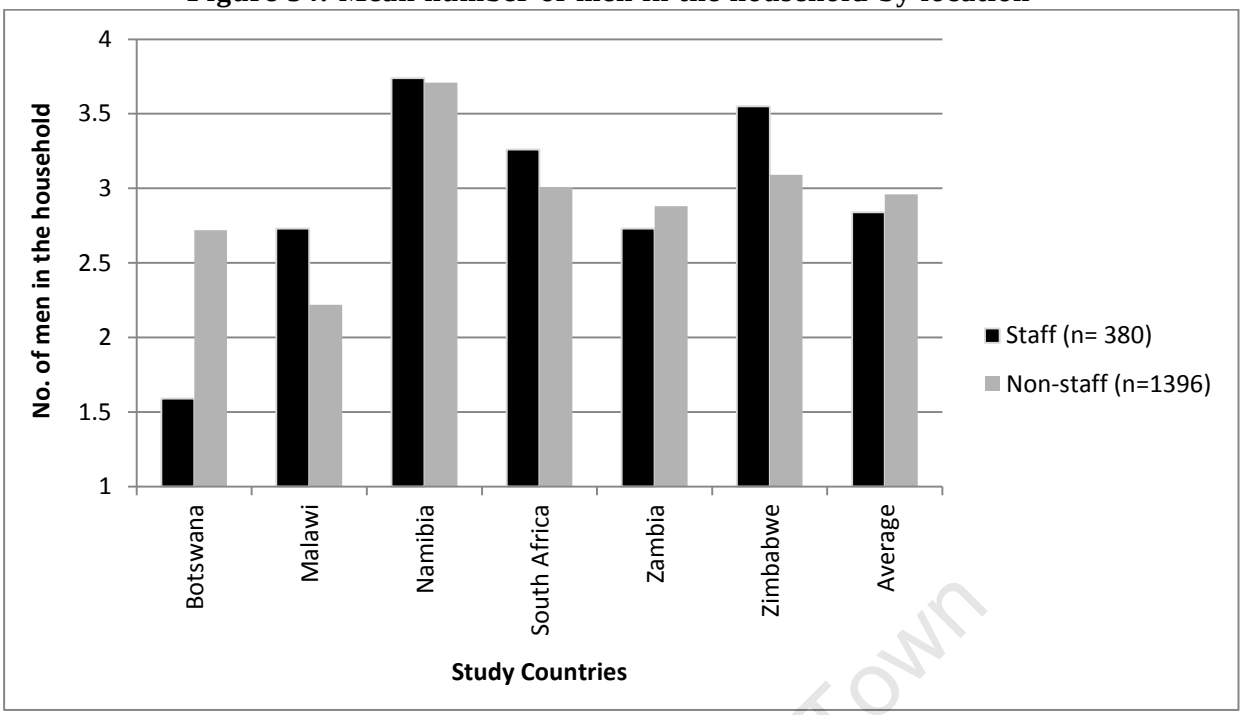
On average, there were more females in the households interviewed than males. This is in line with overall data for most African communities that show that there are more females in the population than males (Botswana Demographic Survey, 2006; National Statistical Office Malawi, 2008). As mentioned earlier, it is also in line with the trend in rural African areas for men to seek employment and women to remain in the rural areas to care for families, livestock and crops (Bryceson, 1999). The average household in the total sample had more than three children in the household under 20 years of age.

2.1. MEAN NUMBER OF MEN IN THE HOUSEHOLD

Table 66: Mean number of men in the household by location

National group sampled	Staff (n=380)	Non-staff (n=1396)	Average (n=1776)
Botswana	1.59 (min. 0, max. 8)	2.72 (min. 0, max. 16)	2.42 (min.0, max. 16)
Malawi	2.73 (min. 0, max. 7)	2.22 (min. 0, max. 6)	2.33 (min. 0, max. 7)
Namibia	3.74 (min. 0, max. 8)	3.71 (min. 0, max. 26)	3.71 (min. 0, max. 26)
South Africa	3.26 (min. 0, max. 9)	3.01 (min. 0, max. 10)	3.05 (min. 0, max. 10)
Zambia	2.73 (min. 1, max. 7)	2.88 (min. 0, max. 10)	2.85 (min. 0, max. 10)
Zimbabwe	3.55 (min. 1, max. 8)	3.09 (min. 0, max. 10)	3.18 (min. 0, max. 10)
Average	**2.84 (min. 0, max. 9)**	**2.96 (min. 0 max. 26)**	**2.93 (min. 0, max. 26)**

Figure 34: Mean number of men in the household by location

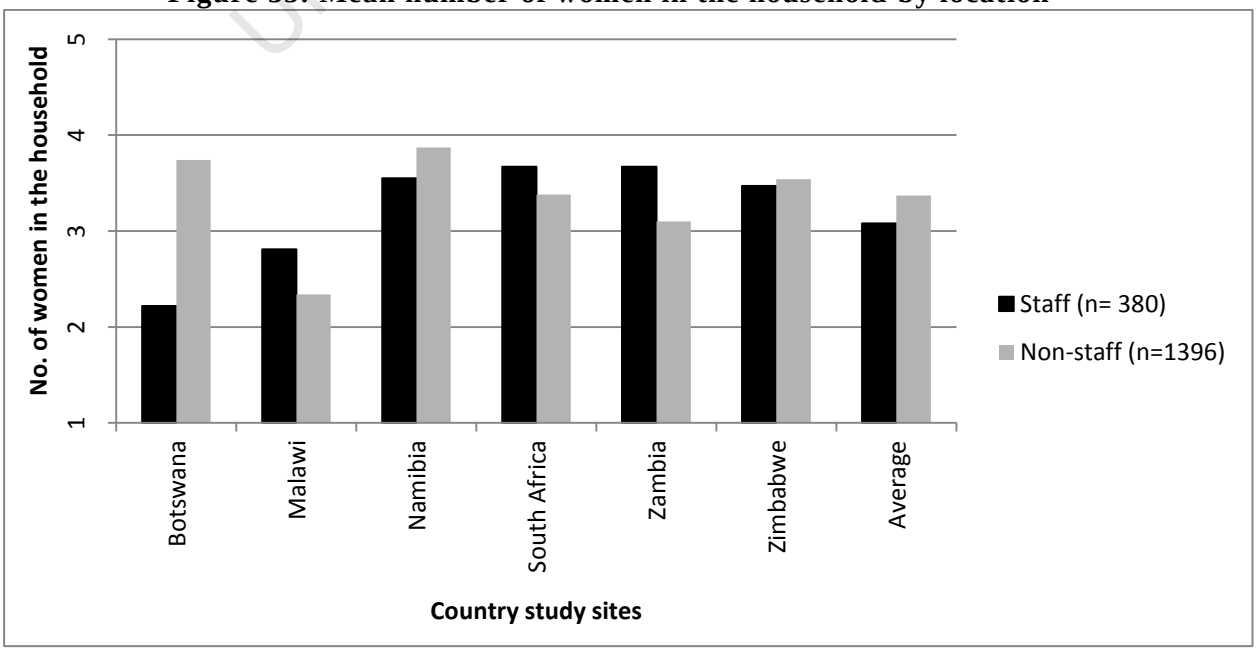


2.2. MEAN NUMBER OF WOMEN IN THE HOUSEHOLD

Table 67: Mean number of women in the household by location

National group sampled	Staff (n=380)	Non-staff (n=1396)	Average (n=1776)
Botswana	2.22 (min. 0, max. 8)	3.74 (min. 0, max. 25)	3.33 (min.0, max. 25)
Malawi	2.81 (min. 0, max. 7)	2.34 (min. 0, max. 7)	2.45 (min. 0, max. 7)
Namibia	3.55 (min. 0, max. 9)	3.87 (min. 0, max. 26)	3.80 (min. 0, max. 26)
South Africa	3.67 (min. 0, max. 13)	3.38 (min. 0, max. 19)	3.42 (min. 0, max. 19)
Zambia	3.67 (min. 0, max. 8)	3.10 (min. 1, max. 13)	3.21 (min. 0, max. 13)
Zimbabwe	3.47 (min. 0, max. 7)	3.54 (min. 0, max. 23)	3.53 (min. 0, max. 23)
Average	**3.09 (min. 0, max. 13)**	**3.37 (min. 0 max. 26)**	**3.31 (min. 0, max. 26)**

Figure 35: Mean number of women in the household by location

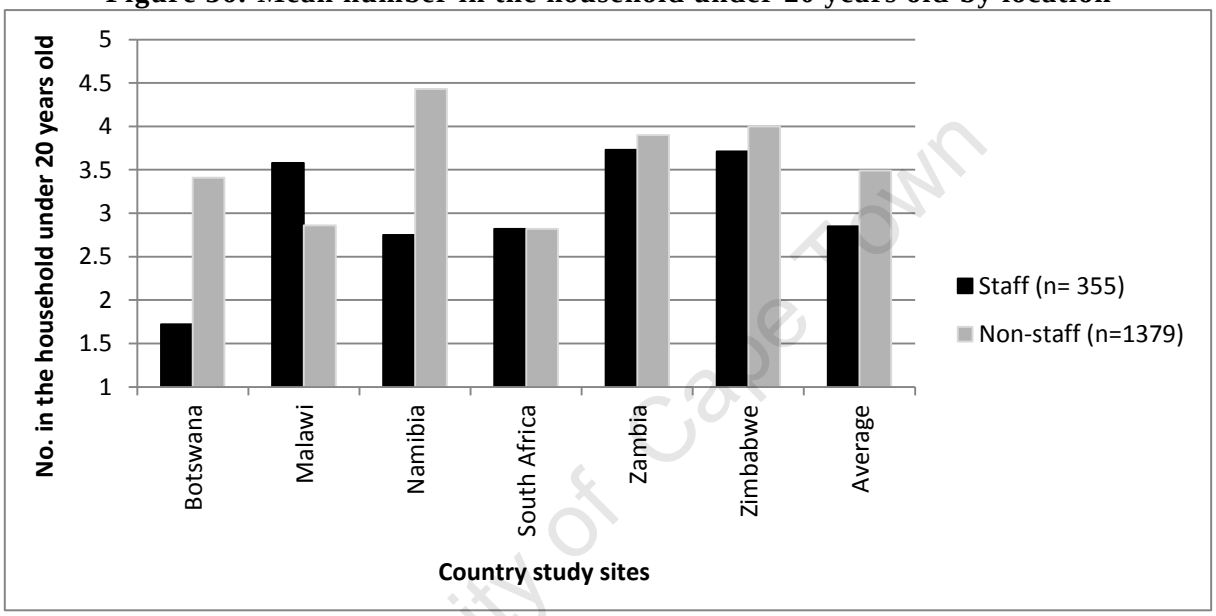


2.3. NUMBER IN THE HOUSEHOLD UNDER 20 YEARS OLD

Table 68: Mean number in the household under 20 years old by location

National group sampled	Staff (n=355)	Non-staff (n=1379)	Average (n=1734)
Botswana	1.72 (min. 0, max. 9)	3.41 (min. 0, max. 29)	2.95 (min.0, max. 29)
Malawi	3.58 (min. 0, max. 10)	2.86 (min. 0, max. 9)	3.02 (min. 0, max. 10)
Namibia	2.75 (min. 0, max. 8)	4.43 (min. 0, max. 28)	4.14 (min. 0, max. 28)
South Africa	2.82 (min. 0, max. 9)	2.82 (min. 0, max. 12)	2.82 (min. 0, max. 12)
Zambia	3.73 (min. 0, max. 9)	3.90 (min. 1, max. 14)	3.87 (min. 0, max. 14)
Zimbabwe	3.71 (min. 0, max. 9)	4.00 (min. 0, max. 13)	3.94 (min. 0, max. 13)
Average	**2.85 (min. 0, max. 10)**	**3.49 (min. 0 max. 29)**	**3.36 (min. 0, max. 29)**

Figure 36: Mean number in the household under 20 years old by location



3. MARITAL STATUS OF RESPONDENTS

The 'Married' category includes both those who were married civilly and those married traditionally.

Figure 37: Whole sample: Marital status

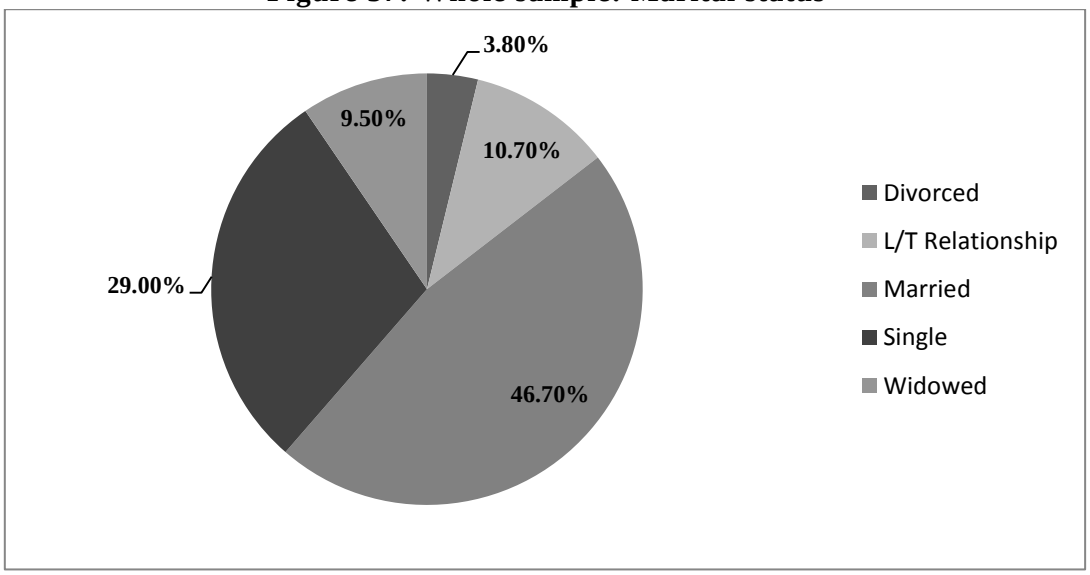


Table 69: Breakdown of respondent marital status by location

National group sampled	Marital Status	Staff (n=385)	Non-staff (n=1400)	Average (n=1785)
Botswana	Divorced	0.0%	0.4%	0.3%
	L/T Relationship	0.0%	22.6%	16.4%
	Married	15.2%	11.9%	12.8%
	Single	83.8%	60.9%	67.2%
	Widowed	0.0%	4.2%	3.1%
Malawi	Divorced	2.7%	11.6%	9.5%
	L/T Relationship	2.7%	0.4%	0.9%
	Married	93.2%	77.3%	80.9%
	Single	1.4%	1.6%	1.5%
	Widowed	0.0%	8.4%	6.5%
Namibia	Divorced	1.2%	0.7%	0.9%
	L/T Relationship	0.0%	17.0%	13.1%
	Married	16.0%	34.7%	30.4%
	Single	82.7%	42.4%	51.7%
	Widowed	0.0%	4.8%	3.7%
South Africa	Divorced	1.6%	4.3%	3.8%
	L/T Relationship	44.3%	13.4%	18.2%
	Married	42.6%	45.3%	44.8%
	Single	11.5%	19.8%	18.5%
	Widowed	0.0%	17.0%	14.4%
Zambia	Divorced	0.0%	14.9%	12.2%
	L/T Relationship	13.3%	0.0%	2.4%
	Married	86.7%	67.2%	70.7%
	Single	0.0%	0.0%	0.0%
	Widowed	0.0%	17.9%	14.6%
Zimbabwe	Divorced	1.8%	3.2%	2.9%
	L/T Relationship	7.3%	2.7%	4.3%
	Married	89%	61.5%	66.8%
	Single	1.8%	7.2%	6.1%
	Widowed	0.0%	25.3%	20.0%
Average	Divorced	1.3%	4.5%	3.8%
	L/T Relationship	9.1%	11.1%	10.7%
	Married	48.1%	46.4%	46.7%
	Single	41.3%	25.6%	29.0%
	Widowed	0.0%	12.1%	9.5%

In terms of marital status it is interesting to note that in Botswana most of the staff and non-staff respondents were single. They were, on average, the youngest respondents interviewed; which could explain this. Most respondents in Zimbabwe, Zambia and Malawi were married (civilly and traditionally). The more rural nature of the households in Zimbabwe, Zambia and Malawi could also explain the more traditional lifestyle of early marriage.

In Zimbabwe, 25% of the non-staff respondents were widowed. The author was told by respondents that this was mostly as a result of HIV/AIDS, but also due to the civil war in Zimbabwe in the 1980s. Eight-three percent of the Namibian staff respondents were single. After Botswana they had, on average, the youngest respondents; which could explain this statistic.

For the total sample (n=1785) most of the respondents (46.7%) were married, with 29% being single.

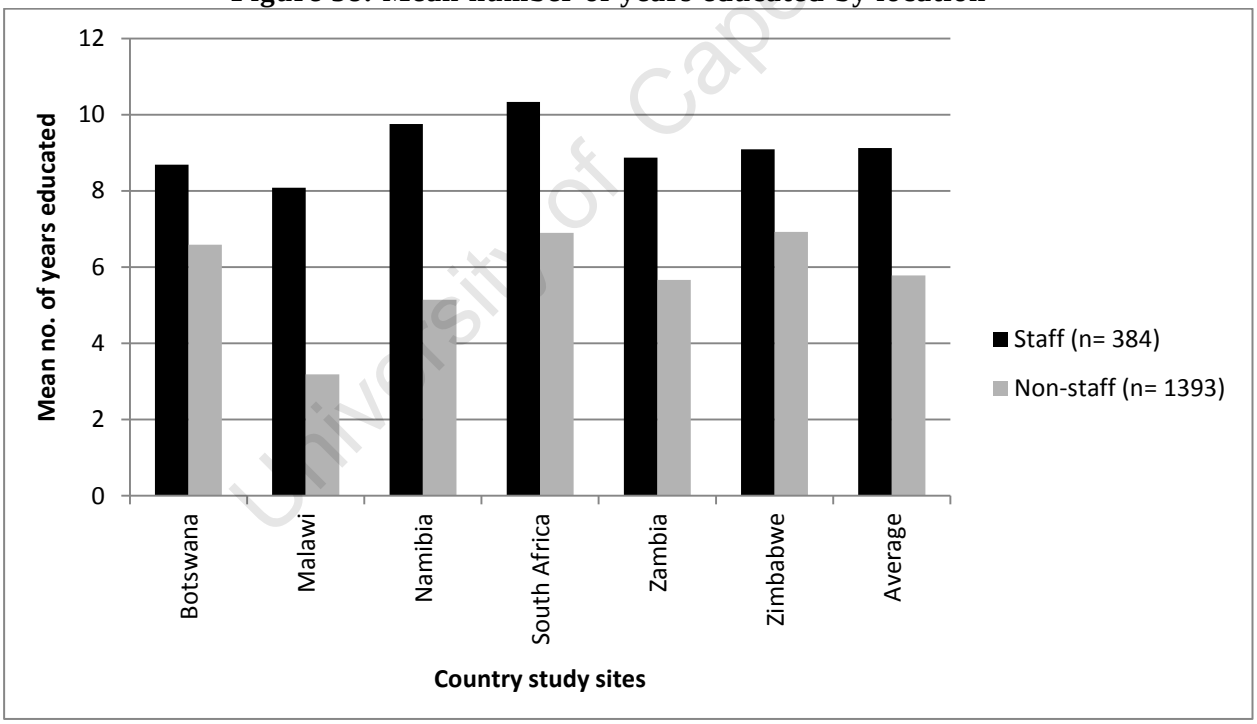
4. EDUCATION LEVEL

Table 70: Mean number of years educated by location

National group sampled	Staff (n= 384)	Non-staff (n= 1393)	Statistically significant	Average (n= 1777)
Botswana	8.69	6.59	U = 9638.5, p < .001	7.17
Malawi	8.08	3.19	U = 3286.5, p < .001	4.31
Namibia	9.75	5.14	U = 4420, p < .001	6.21
South Africa	10.33	6.90	U = 5156, p < .001	7.44
Zambia	8.87	5.66	U = 210.5, p < .001	6.24
Zimbabwe	9.09	6.92	U = 3342, p < .001	7.36
Average	**9.12**	**5.78**	**U = 144 495, p < .001**	**6.50**

The majority of the Zimbabwean respondents were older which could explain the high average number of years of education. The recent political upheaval and lowering of education standards may not give a similar result in younger respondents.

Figure 38: Mean number of years educated by location



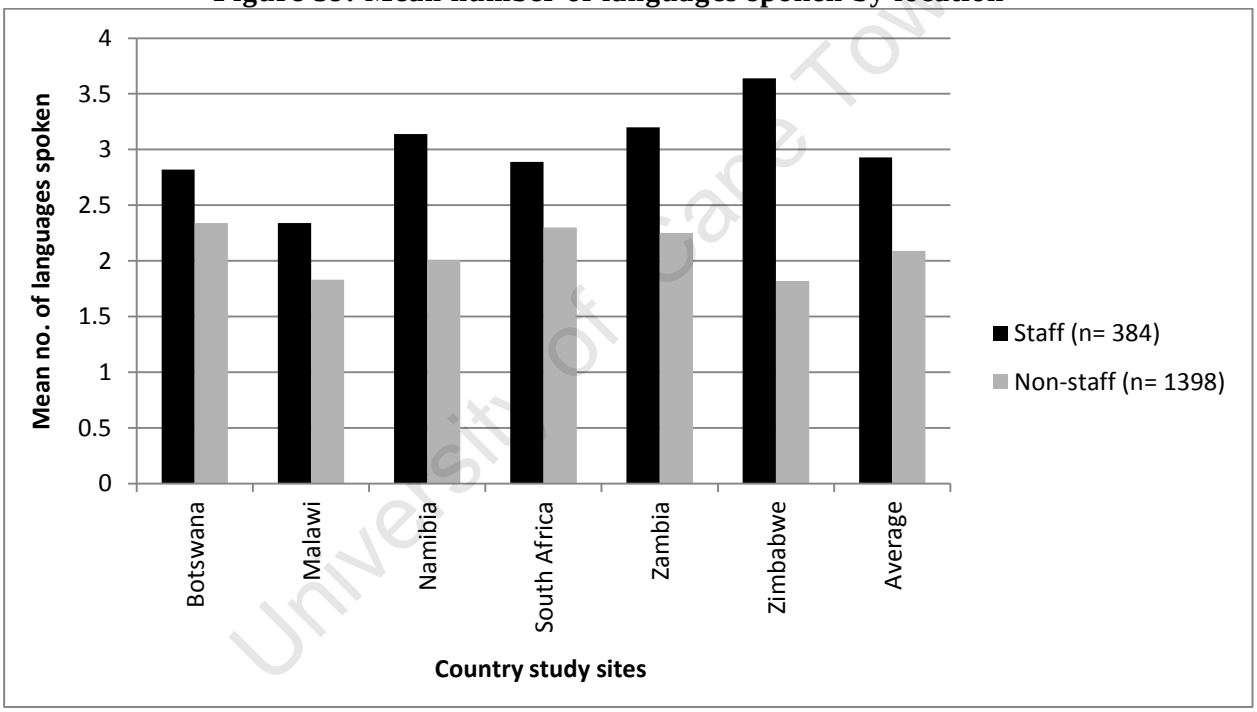
5. NUMBER OF LANGUAGES SPOKEN

In terms of the number of languages spoken, for the total sample, the average number was more than two, with Botswanan respondents having the highest average number of languages spoken (M=2.47).

Table 71: Mean number of languages spoken by location

National group sampled	Staff (n= 384)	Non-staff (n= 1398)	Average (n= 1782)
Botswana	2.82	2.34	2.47
Malawi	2.34	1.83	1.95
Namibia	3.14	2.01	2.27
South Africa	2.89	2.3	2.39
Zambia	3.2	2.25	2.43
Zimbabwe	3.64	1.82	2.18
Average	**2.93**	**2.09**	**2.27**

Figure 39: Mean number of languages spoken by location



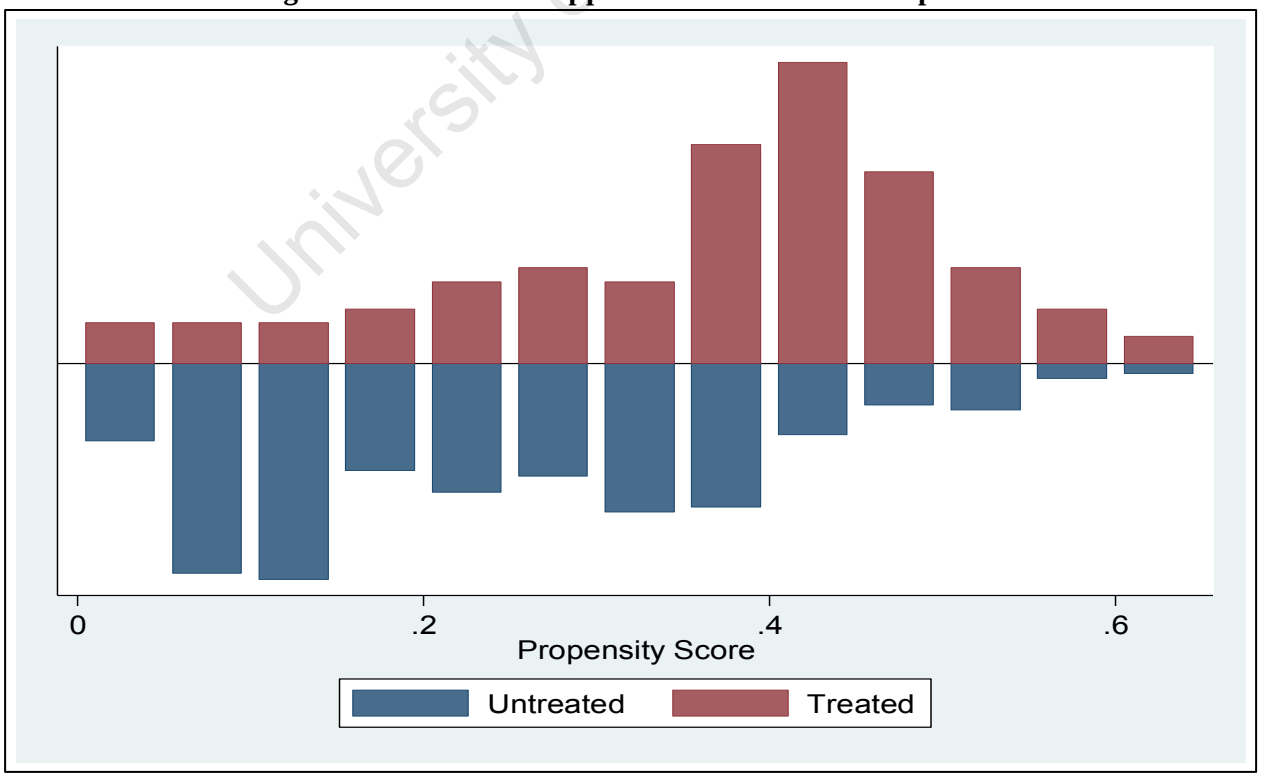
APPENDIX G - PROPENSITY SCORE MATCHING 'COMMON SUPPORT' RESULTS

If the propensity score values (0 to 1), defined as the conditional probability of being treated given the selected independent variables, have observations from both the treated and untreated groups then the condition for 'common support' is met (Smith, 2012). The condition for 'common support' is met if there is some chance that a respondent with a given propensity score could fall into either of the treated and untreated groups, i.e. there is no selection bias (Smith, 2012).

The condition for 'common support' was partly met in all study countries as the propensity score values had observations from the treated and untreated groups. The propensity score values are, however, not always evenly spread for the treated and untreated groups in all countries. A number of the untreated group had low propensity score values and many of the treated group had relatively high propensity score values, especially in Malawi and Namibia.

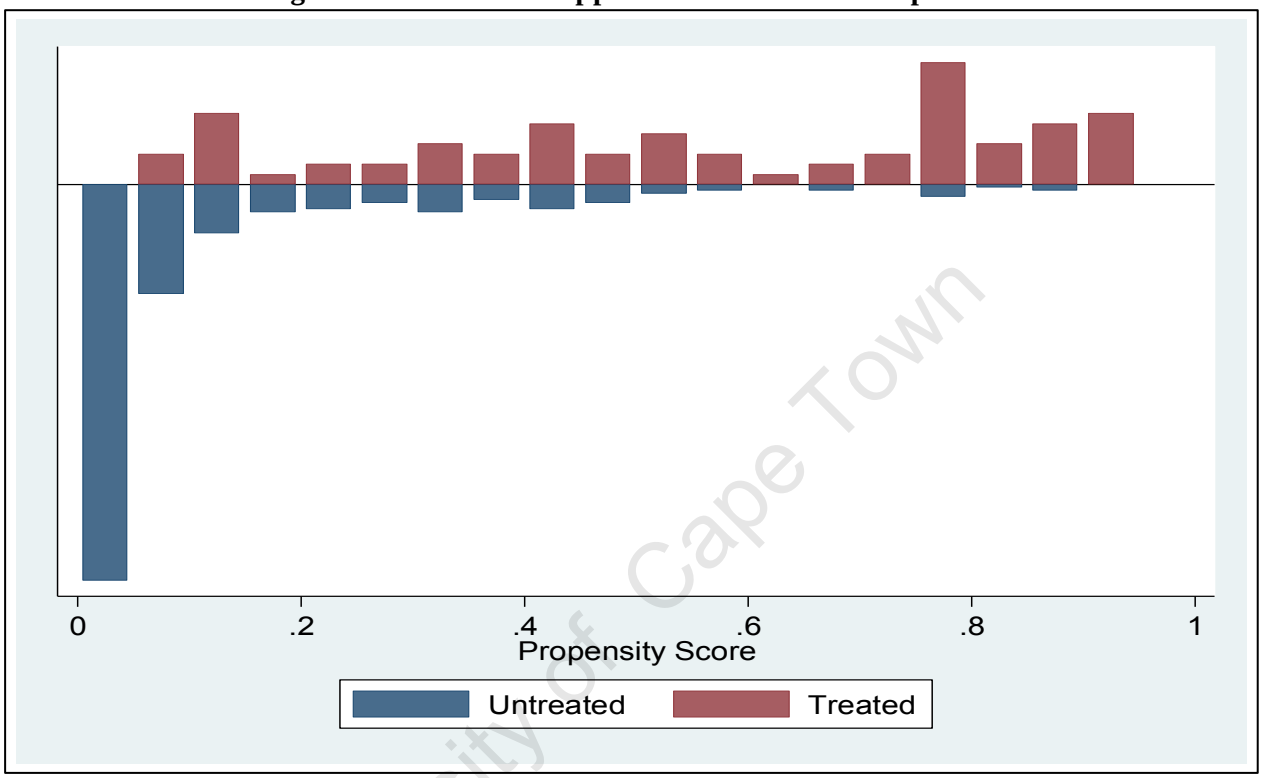
For the Botswana sample Figure 40 shows the 'common support' and illustrates that the treated and untreated samples were relatively well matched.

Figure 40: Common support for Botswanan sample



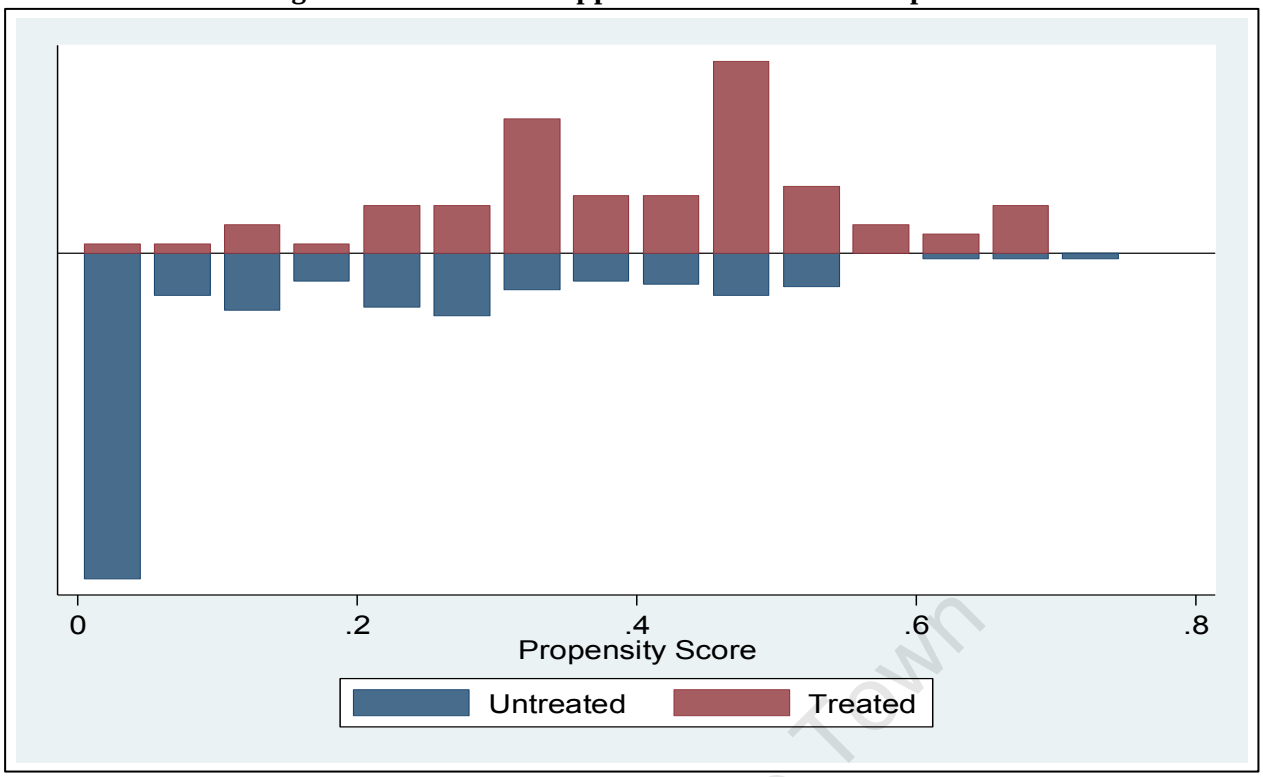
For the Malawi sample Figure 41 illustrates the 'common support,' showing that the Malawian sample of treated and untreated was not well matched on age and number of years educated. There were a number of the untreated sample with low propensity scores and a number of treated with high propensity scores. Matching in Malawi, therefore, loses a number of cases and could result in the loss of important data.

Figure 41: Common support for Malawian sample



For the Namibia sample Figure 42 shows that the sample was relatively well matched for high propensity scores, but not low ones. This is most likely as a result of the Himba non-staff respondents having low propensity scores as many had little formal education.

Figure 42: Common support for Namibian sample



The 'common support' for the South Africa sample shown in Figure 43 illustrates that the treated and untreated samples were well matched.

Figure 43: Common support for South African sample

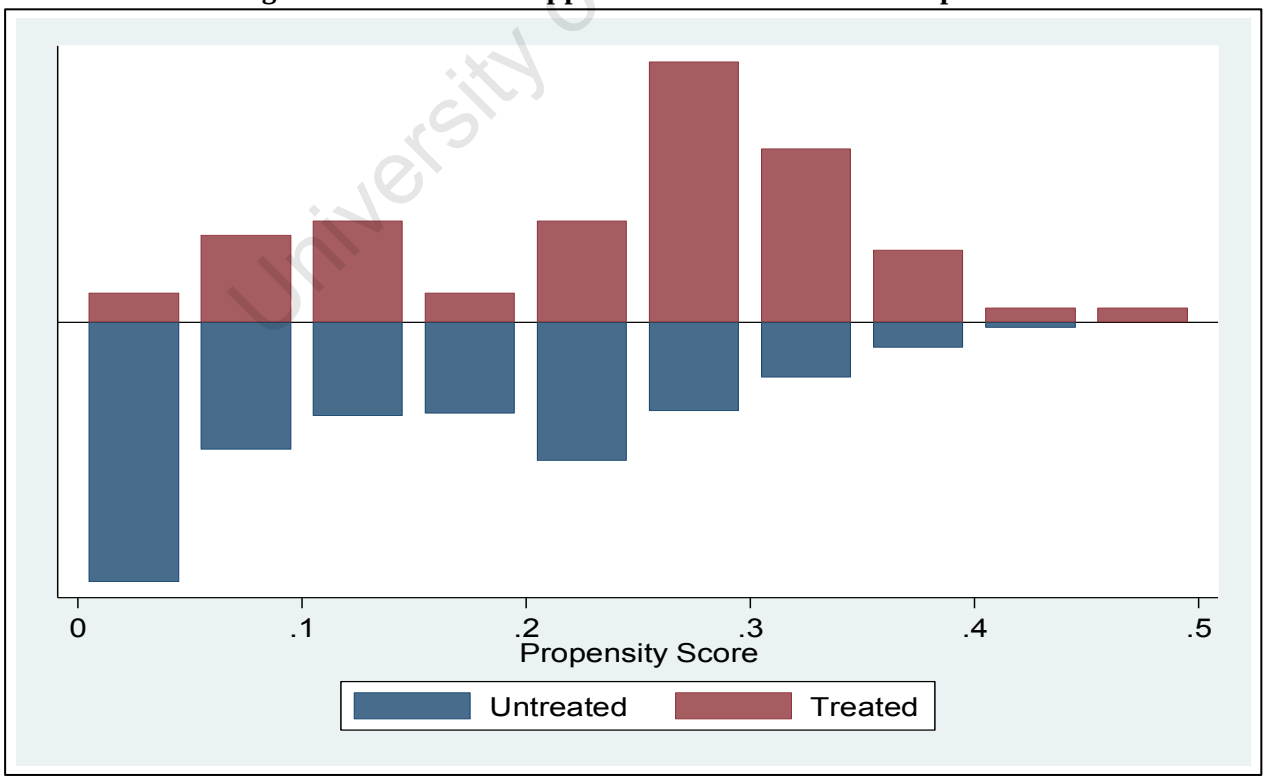


Figure 44 for the Zambia sample shows areas of 'common support,' but as a result of the small sample, there were insufficient observations for the regression when matching is used.

Figure 44: Common support for Zambian sample

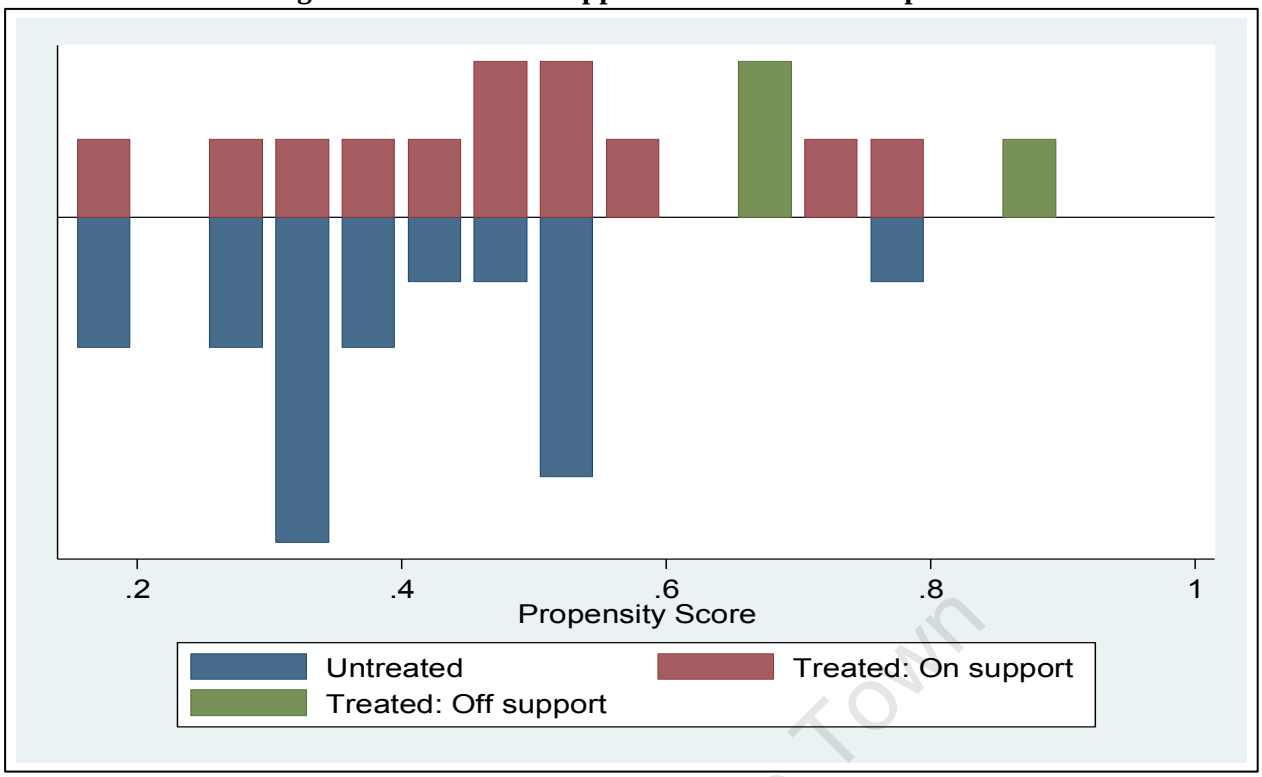
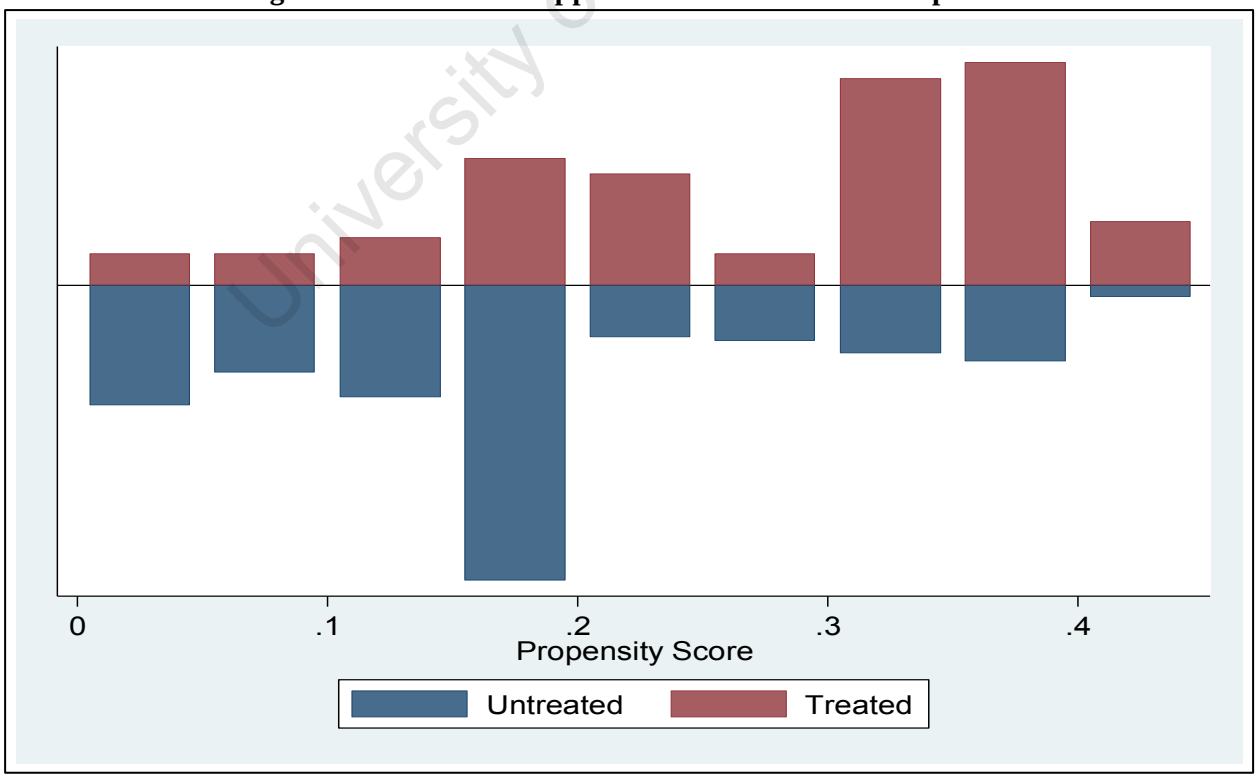


Figure 45 illustrates that the Zimbabwe sample of treated and untreated was well matched on age and number of years educated.

Figure 45: Common support for Zimbabwean sample



APPENDIX H - COUNTRY EXPENDITURE PERCENTAGES

Table 72: Total sample: Country study site expenditure percentages

Botswana	**n=360**
Food	27.4%
Education	13.2%
Money to dependents	11.8%
Telephone	7.7%
Toiletries	6.6%
Casual labour/childcare	5.3%
Accounts	5.3%
Clothes	5.2%
Other	4.3%
Rent	3.3%
Cleaning materials	1.9%
Fuel (petrol/diesel)	1.8%
Loans	1.6%
Alcohol	1.1%
Water expenses	0.9%
Electricity expense	0.9%
Medical	0.8%
Cigarettes/tobacco	0.6%
Transport	0.2%
Gas/paraffin/candles	0.2%
Total	**100.0%**

Malawi	**n=325**
Food	43.7%
Loans	13.0%
Education	6.6%
Cleaning materials	6.0%
Clothes	5.9%
Money to dependents	3.6%
Telephone	3.5%
Rent	3.4%
Gas/paraffin/candles	3.3%
Transport	3.2%
Toiletries	1.7%
Alcohol	1.6%
Medical	1.1%
Casual labour/childcare	1.0%
Accounts	0.8%
Other	0.7%
Cigarettes/tobacco	0.3%
Water expenses	0.3%
Electricity expense	0.1%
Fuel (petrol/diesel)	0.0%
Total	**100.0%**

Namibia	**n=351**
Food	31.0%
Toiletries	7.9%
Transport	7.6%
Money to dependents	6.8%
Cleaning materials	6.2%
Alcohol	6.0%
Accounts	5.5%
Education	5.0%
Telephone	3.8%
Casual labour/childcare	3.6%
Cigarettes/tobacco	3.5%
Clothes	3.4%
Electricity expense	2.4%
Medical	1.7%
Rent	1.5%
Gas/paraffin/candles	1.3%
Other	1.2%
Water expenses	1.0%
Loans	0.6%
Fuel (petrol/diesel)	0.0%
Total	**100.0%**

South Africa	**n=390**
Food	35.0%
Cleaning materials	6.0%
Other	5.8%
Education	5.7%
Accounts	5.3%
Toiletries	4.9%
Electricity expense	4.7%
Money to dependents	4.3%
Loans	4.2%
Telephone	3.9%
Cigarettes/tobacco	3.6%
Gas/paraffin/candles	3.3%
Transport	3.2%
Fuel (petrol/diesel)	2.3%
Medical	2.3%
Clothes	2.3%
Casual labour/childcare	1.7%
Alcohol	1.0%
Rent	0.4%
Water expenses	0.1%
Total	**100.0%**

Zambia	**n=82**
Food	45.1%
Education	8.9%
Loans	8.2%
Cleaning materials	6.7%
Toiletries	6.4%
Clothes	4.8%
Gas/paraffin/candles	4.3%
Telephone	3.6%
Other	3.4%
Money to dependents	3.3%
Alcohol	1.7%
Rent	1.6%
Casual labour/childcare	0.6%
Electricity expense	0.4%
Transport	0.4%
Cigarettes/tobacco	0.4%
Water expenses	0.1%
Medical	0.0%
Accounts	0.0%
Fuel (petrol/diesel)	0.0%
Total	**100.0%**

Zimbabwe	**n=276**
Food	33.5%
Education	9.9%
Other	9.4%
Cleaning materials	5.8%
Clothes	5.7%
Toiletries	5.6%
Transport	5.4%
Medical	3.8%
Casual labour/childcare	3.4%
Telephone	2.4%
Alcohol	2.3%
Gas/paraffin/candles	2.3%
Rent	2.1%
Money to dependents	2.1%
Water expenses	2.0%
Electricity expense	1.3%
Loans	1.0%
Cigarettes/tobacco	0.9%
Fuel (petrol/diesel)	0.6%
Accounts	0.4%
Total	**100.0%**

Table 73: Staff sample: Country study site expenditure percentages

Botswana	n=99
Food	27.6%
Education	13.6%
Money to dependents	12.2%
Telephone	7.7%
Toiletries	6.8%
Accounts	5.4%
Clothes	5.3%
Casual labour/childcare	5.3%
Other	4.5%
Rent	3.5%
Cleaning materials	1.9%
Loans	1.6%
Alcohol	1.1%
Water expenses	0.9%
Electricity expense	0.9%
Medical expenses	0.8%
Cigarettes/tobacco	0.6%
Transport	0.2%
Gas/paraffin/candles	0.0%
Fuel (petrol/diesel)	0.0%
Total	**100.0%**

Malawi	n=76
Food	40.1%
Education	12.2%
Rent	7.6%
Clothes	6.3%
Cleaning materials	6.1%
Money to dependents	5.0%
Transport	4.9%
Telephone	4.6%
Toiletries	2.7%
Loans	2.5%
Gas/paraffin/candles	2.2%
Casual labour/childcare	1.8%
Accounts	1.0%
Alcohol	1.0%
Other	0.9%
Water expenses	0.5%
Electricity expense	0.3%
Cigarettes/tobacco	0.3%
Fuel (petrol/diesel)	0.0%
Medical expenses	0.0%
Total	**100.0%**

Namibia	n=84
Food	23.4%
Accounts	11.0%
Money to dependents	10.3%
Toiletries	6.6%
Telephone	6.5%
Education	5.6%
Rent	5.0%
Casual labour/childcare	4.5%
Medical expenses	4.3%
Clothes	4.2%
Electricity expense	4.2%
Water expenses	3.5%
Other	2.9%
Alcohol	2.8%
Cigarettes/tobacco	1.9%
Gas/paraffin/candles	1.4%
Cleaning materials	1.4%
Transport	0.5%
Loans	0.3%
Fuel (petrol/diesel)	0.0%
Total	**100.0%**

South Africa	n=62
Food	32.3%
Accounts	8.5%
Education	5.9%
Loans	5.7%
Clothes	5.5%
Casual labour/childcare	5.5%
Money to dependents	5.0%
Electricity expense	5.0%
Toiletries	4.9%
Gas/paraffin/candles	4.0%
Telephone	4.0%
Cleaning materials	4.0%
Other	3.5%
Fuel (petrol/diesel)	2.9%
Transport	2.0%
Medical expenses	0.7%
Water expenses	0.3%
Alcohol	0.3%
Cigarettes/tobacco	0.1%
Rent	0.0%
Total	**100.0%**

Zambia	n=15
Food	43.6%
Clothes	7.3%
Education	6.6%
Telephone	6.6%
Rent	6.4%
Gas/paraffin/candles	6.2%
Cleaning materials	4.7%
Toiletries	4.2%
Money to dependents	4.1%
Other	3.3%
Electricity expense	1.5%
Alcohol	1.5%
Transport	1.4%
Casual labour/childcare	1.4%
Water expenses	0.6%
Cigarettes/tobacco	0.5%
Medical expenses	0.1%
Fuel (petrol/diesel)	0.0%
Accounts	0.0%
Loans	0.0%
Total	**100.0%**

Zimbabwe	n=63
Food	25.3%
Education	13.2%
Other	9.1%
Cleaning materials	6.8%
Medical expenses	5.7%
Transport	5.0%
Casual labour/childcare	5.0%
Telephone	4.3%
Rent	4.0%
Water expenses	3.8%
Clothes	3.4%
Toiletries	3.2%
Money to dependents	2.6%
Electricity expense	2.4%
Gas/paraffin/candles	2.0%
Alcohol	1.7%
Fuel (petrol/diesel)	1.1%
Accounts	0.8%
Cigarettes/tobacco	0.5%
Loans	0.0%
Total	**100.0%**

Table 74: Non-staff sample: Country study site expenditure percentages

Botswana	n=261
Food	25.2%
Loans	13.3%
Casual Labour/childcare	9.7%
Toiletries	7.6%
Gas/paraffin/candles	6.4%
Alcohol	6.0%
Fuel (petrol/diesel)	5.9%
Cleaning materials	5.6%
Clothes	4.1%
Telephone	3.2%
Education	2.4%
Transport	2.3%
Accounts	2.3%
Cigarettes/tobacco	1.9%
Money to dependents	1.3%
Other	1.1%
Electricity expense	1.0%
Water expenses	0.4%
Medical expenses	0.2%
Rent	0.2%
Total	**100.0%**

Malawi	n=251
Food	46.3%
Loans	20.7%
Cleaning materials	6.0%
Clothes	5.7%
Gas/paraffin/candles	4.1%
Telephone	2.8%
Money to dependents	2.6%
Education	2.5%
Alcohol	2.1%
Transport	2.0%
Medical expenses	1.9%
Toiletries	1.1%
Accounts	0.6%
Other	0.6%
Casual Labour/childcare	0.4%
Rent	0.3%
Cigarettes/tobacco	0.2%
Water	0.1%
Electricity expense	0.0%
Fuel (petrol/diesel)	0.0%
Total	**100.0%**

Namibia	n=271
Food	33.9%
Transport	10.3%
Toiletries	8.4%
Cleaning materials	8.0%
Alcohol	7.2%
Money to dependents	5.4%
Education	4.8%
Cigarettes/tobacco	4.1%
Accounts	3.5%
Casual Labour/childcare	3.2%
Clothes	3.1%
Telephone	2.7%
Electricity expense	1.7%
Gas/paraffin/candles	1.3%
Medical expenses	0.8%
Loans	0.7%
Other	0.6%
Rent	0.2%
Water Expenses	0.0%
Fuel (petrol/diesel)	0.0%
Total	**100.0%**

South Africa	n=329
Food	36.0%
Clothes	6.8%
Other	6.6%
Education	5.6%
Toiletries	4.9%
Cleaning materials	4.8%
Electricity expense	4.6%
Accounts	4.2%
Money to dependents	4.0%
Telephone	3.8%
Loans	3.7%
Transport	3.7%
Gas/paraffin/candles	3.0%
Medical expenses	2.9%
Fuel (petrol/diesel)	2.1%
Alcohol	1.3%
Casual Labour/childcare	1.1%
Rent	0.5%
Cigarettes/tobacco	0.3%
Water expenses	0.0%
Total	**100.0%**

Zambia	n=67
Food	45.6%
Loans	11.0%
Education	9.7%
Cleaning materials	7.4%
Toiletries	7.2%
Clothes	4.0%
Gas/paraffin/candles	3.7%
Other	3.4%
Money to dependents	3.0%
Telephone	2.6%
Alcohol	1.8%
Casual Labour/childcare	0.4%
Cigarettes/tobacco	0.3%
Transport	0.0%
Rent	0.0%
Electricity expense	0.0%
Water expenses	0.0%
Fuel (petrol/diesel)	0.0%
Accounts	0.0%
Medical expenses	0.0%
Total	**100.0%**

Zimbabwe	n=221
Food	41.5%
Other	9.8%
Toiletries	8.0%
Clothes	7.9%
Education	6.7%
Transport	5.6%
Cleaning materials	4.9%
Alcohol	2.9%
Gas/paraffin/candles	2.5%
Medical expenses	2.0%
Loans	1.9%
Casual Labour/childcare	1.8%
Money to dependents	1.6%
Cigarettes/tobacco	1.3%
Telephone	0.6%
Electricity expense	0.3%
Water expenses	0.3%
Rent	0.3%
Fuel (petrol/diesel)	0.2%
Accounts	0.0%
Total	**100.0%**

Table 75: Series of twelve tables presenting descriptive statistics on the impact of various demographic factors on attitudes to tourism and conservation, for staff and non-staff respondents, by location

Botswana staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=87)**	**No (n=8)**	**Yes (n=96)**	**No (n=3)**	**Yes (n=86)**	**No (n=12)**	**Yes (n=97)**	**No (n=1)**	**Yes (n=52)**	**No (n=34)**
Age of respondent (in years)	31.57	29	31.38	37.67	31.55	31.75	31.41	38.00	31.85	31.21
Gender of the respondent (male:female)	46%:54%	38%:62%	46%:54%	33%:67%	49%:51%	25%:75%	45%:55%	100%:0%	44%:56 %	41%:59%
No. of children	1.78	1.88	1.8	4.67	1.81	2.42	1.86	4	2.04	1.65
No. of dependents	8.14	6.5	8.07	9.33	8.14	7.58	8.03	8	8.13	7.94
No. in the household	4.12	3.25	4.09	5.00	4.08	4.5	4.18	2	3.56	4.76
Gender of the household head (male:female)	47%:39%	50%:50%	46%:40%	33%:67%	48%:37%	33%:58%	45%:40%	100%:0%	52%:46 %	53%:47%
Age of the household head (in years)	39.47	33.88	38.89	37.67	38.41	42.45	38.84	38	39.45	37.94

Botswana non-staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=95)**	**No (n=118)**	**Yes (n=193)**	**No (n=41)**	**Yes (n=183)**	**No (n=49)**	**Yes (n=218)**	**No (n=32)**	**Yes (n=240)**	**No (n=21)**
Age of respondent (in years)	29.29	33.91	32.61	33.37	33.50	34.31	31.92	42.35	34.24	24.57
Gender of the respondent (male:female)	43%:57%	46%:54%%	45%:55%	37%:63%	46%:54%	35%:65%	46%:54%	22%:78%	42%:58%	57%:43%
No. of children	1.67	2.52	2.27	2.37	2.31	2.31	2.1	3.75	2.51	.71
No. of dependents	4.79	5.07	5.09	4.88	5.4	3.59	5.1	5.06	5.14	4.38
No. in the household	7.32	6.31	6.78	6.93	6.77	6.24	6.65	6.31	6.77	4.52
Gender of the household head (male:female)	56%:44%	60%:40%	57%:43%	56%:44%	60%:40%	51%:49%	62%:38%	28%:72%	59%:41%	38%:62%
Age of the household head (in years)	46.12	45.65	46.30	46.00	47.02	45.02	45.98	48.76	46.12	46.95

Malawi staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=58)**	**No (n=15)**	**Yes (n=53)**	**No (n=21)**	**Yes (n=46)**	**No (n=27)**	**Yes (n=73)**	**No (n=1)**	**Yes (n=63)**	**No (n=11)**
Age of respondent (in years)	37.16	33.07	36.06	36.90	36.98	35.07	36.18	45.00	36.59	34.64
Gender of the respondent (male:female)	91%:9%	73%:27%	93%:7%	76%:24%	96%:4%	74%:26%	88%:12%	100%:0%	87%:13%	91%:9%
No. of children	3.47	3.27	3.57	3.24	3.59	3.19	3.44	6	3.52	3.18
No. of dependents	8.03	7.67	7.75	8.38	7.87	8.07	7.92	9	7.71	9.18
No. in the household	5.53	5.47	5.57	5.43	5.3	5.81	5.49	8	5.41	6.18
Gender of the household head (male:female)	95%:5%	87%:13%	94%:6%	90%:10%	96%:4%	89%:11%	93%:7%	100%:0%	94%:6%	91%:9%
Age of the household head (in years)	39.71	35.60	38.81	38.81	40.39	36.15	38.73	45	38.46	40.82
Malawi non-staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=78)**	**No (n=155)**	**Yes (n=121)**	**No (n=112)**	**Yes (n=93)**	**No (n=144)**	**Yes (n=201)**	**No (n=45)**	**Yes (n=236)**	**No (n=13)**
Age of respondent (in years)	39.19	38.37	38.26	38.25	36.00	40.17	39.12	36.2	38.49	41.77
Gender of the respondent (male:female)	47%:51%	37%:63%	47%:53%	31%:69%	41%:59%	38%:61%	44%:55%	16%:84%	39%:60%	23%:77%
No. of children	4.27	4.17	4.08	4.27	3.9	4.39	4.05	4.44	4.21	2.92
No. of dependents	5.12	3.85	4.52	4.35	4.37	4.41	4.32	4.05	4.30	3.08
No. in the household	4.87	4.58	4.74	4.69	4.48	4.73	4.56	4.8	4.64	3.46
Gender of the household head (male:female)	72%:28%	83%:17%	80%:20%	79%:21%	72%:28%	81%:19%	77%:23%	82%:18%	79%:21%	61%:39%
Age of the household head (in years)	41.26	40.78	40.26	41.19	37.81	42.89	40.88	41.33	40.94	46.31

Namibia staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=69)**	**No (n=6)**	**Yes (n=79)**	**No (n=2)**	**Yes (n=68)**	**No (n=10)**	**Yes (n=80)**	**No (n=1)**	**Yes (n=27)**	**No (n=54)**
Age of respondent (in years)	33.04	30.33	32.53	31.00	32.3	31.2	32.55	28.0	32.48	32.5
Gender of the respondent (male:female)	38%:61%	50%:50%	39%:60%	50%:50%	41%:57%	10%:90%	40%:59%	0%:100%	33%:63%	43%:57%
No. of children	2.41	1.67	2.3	2.5	2.15	2.4	2.3	3.0	2.44	2.24
No. of dependents	6.27	4.67	6.04	6.5	5.85	7.0	6.05	6.0	6.44	5.85
No. in the household	8.62	6.17	8.66	7.00	8.72	8.2	8.63	8.0	8.48	8.69
Gender of the household head (male:female)	51%:49%	83%:17%	52%:48%	0%:100%	53%:47%	30%:70%	50%:50%	100%:0%	52%:48%	50%:50%
Age of the household head (in years)	52.44	37.5	51.71	45.00	52.07	46.2	51.58	48.0	59.00	47.74
Namibia non-staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=119)**	**No (n=52)**	**Yes (n=185)**	**No (n=23)**	**Yes (n=115)**	**No (n=49)**	**Yes (n=252)**	**No (n=6)**	**Yes (n=149)**	**No (n=121)**
Age of respondent (in years)	35.53	35.62	35.73	35.43	34.08	39.31	37.43	26.00	37.65	35.73
Gender of the respondent (male:female)	63%:37%	52%:48%	54%:46%	61%:39%	61%:39%	49%:51%	56%:44%	33%:67%	56%:44%	54%:46%
No. of children	3.28	3.73	3.45	3.35	3.07	4.63	3.55	2.33	3.91	2.82
No. of dependents	6.15	8.4	5.82	11.57	5.5	7.54	6.22	3.00	6.77	5.12
No. in the household	9.37	8.44	9.17	5.91	8.93	8.16	8.34	6.33	9.03	7.23
Gender of the household head (male:female)	61%:38%	61%:39%	56%:43%	52%:48%	53%:46%	65%35%	57%:42%	33%:67%	59%:40%	54%:46%
Age of the household head (in years)	45.83	44.65	46.15	40.70	44.92	47.60	45.83	40.4	45.69	45.22

South Africa staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=33)**	**No (n=21)**	**Yes (n=45)**	**No (n=15)**	**Yes (n=37)**	**No (n=18)**	**Yes (n=61)**	**No (n=0)**	**Yes (n=43)**	**No (n=18)**
Age of respondent (in years)	36.09	36.33	37.51	34.8	37.08	35.44	36.70	N/A	36.84	36.39
Gender of the respondent (male:female)	49%:51%	24%:76%	47%:53%	20%:80%	51%:49%	22%:78%	39%:61%	N/A	37%:63%	44%:56%
No. of children	1.97	2.43	2.47	1.73	2.41	2.0	2.28	N/A	2.21	2.44
No. of dependents	6.48	5.57	6.27	5.93	6.54	5.67	6.16	N/A	5.74	7.17
No. in the household	7.06	6.43	7.09	6.6	7.27	6.5	6.93	N/A	6.79	7.28
Gender of the household head (male:female)	54%:46%	57%:43%	69%:31%	20%:80%	62%:38%	44%:56%	57%:43%	N/A	61%:39%	50%:50%
Age of the household head (in years)	56.88	48.71	53.89	52.47	56.14	47.83	53.23	N/A	52.93	53.94

South Africa non-staff sample	**Has there been a *positive change in* your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=182)**	**No (n=55)**	**Yes (n=251)**	**No (n=16)**	**Yes (n=169)**	**No (n=21)**	**Yes (n=296)**	**No (n=7)**	**Yes (n=201)**	**No (n=128)**
Age of respondent (in years)	41.47	46.05	42.76	46.0	43.24	40.76	42.94	59.86	46.16	41.36
Gender of the respondent (male:female)	31%:69%	44%:56%	31%:69%	50%:50%	30%:70%	43%:57%	32%:68%	29%:71%	34%:66%	27%:73%
No. of children	3.09	3.87	3.37	3.94	3.27	3.52	3.43	6.17	3.62	3.2
No. of dependents	3.51	4.2	3.8	6.06	3.72	5.0	3.89	6.17	4.1	3.46
No. in the household	6.31	6.69	6.36	8.19	6.38	7.14	6.45	7.29	6.26	6.61
Gender of the household head (male:female)	65%:34%	60%:40%	65%:34%	56%:44%	61%:39%	67%:33%	64%:35%	29%:71%	65%:34%	59%:41%
Age of the household head (in years)	51.10	56.7	52.26	55.53	52.04	51.71	52.49	63.14	53.83	52.55

Zambia staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=13)**	**No (n=2)**	**Yes (n=15)**	**No (n=0)**	**Yes (n=12)**	**No (n=1)**	**Yes (n=15)**	**No (n=0)**	**Yes (n=14)**	**No (n=1)**
Age of respondent (in years)	36.69	37.5	36.8	N/A	36.58	40.00	36.8	N/A	36.71	38.0
Gender of the respondent (male:female)	100%:0%	100%:0%	100%:0%	N/A	100%:0%	100%:0%	100%:0%	N/A	100%:0%	100%:0%
No. of children	2.69	3.5	2.8	N/A	2.83	6.0	2.8	N/A	2.86	2.0
No. of dependents	7.46	6.0	7.27	N/A	7.5	8.0	7.27	N/A	7.29	7.0
No. in the household	6.38	6.5	6.4	N/A	6.25	10.0	6.4	N/A	6.57	4.0
Gender of the household head (male:female)	100%:0%	100%:0%	100%:0%	N/A	100%:0%	100%:0%	100%:0%	N/A	100%:0%	100%:0%
Age of the household head (in years)	36.69	37.5	36.8	N/A	36.58	40.00	36.8	N/A	36.71	38.0
Zambia non-staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=50)**	**No (n=15)**	**Yes (n=62)**	**No (n=3)**	**Yes (n=52)**	**No (n=10)**	**Yes (n=64)**	**No (n=3)**	**Yes (n=66)**	**No (n=1)**
Age of respondent (in years)	40.98	37.4	40.69	34.33	38.75	44.50	40.13	57.0	40.92	38.00
Gender of the respondent (male:female)	26%:74%	33%:67%	26%:74%	67%:33%	25%:75%	40%:60%	27%:73%	33%:67%	27%:73%	0%:100%
No. of children	4.82	4.4	4.74	4.0	4.58	5.1	4.64	6.67	4.73	5.0
No. of dependents	5.72	5.8	5.73	5.33	5.67	6.0	5.63	6.33	5.65	6.0
No. in the household	5.94	6.13	5.90	5.67	5.96	5.9	5.97	6.33	5.91	11.0
Gender of the household head (male:female)	64%:36%	93%:7%	68%:32%	100%:0%	65%:35%	90%:10%	69%:31%	67%:33%	68%:32%	100%:0%
Age of the household head (in years)	43.28	39.93	43.00	35.0	41.10	46.3	42.48	57.67	43.12	46.0

Zimbabwe staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=41)**	**No (n=6)**	**Yes (n=49)**	**No (n=5)**	**Yes (n=46)**	**No (n=6)**	**Yes (n=54)**	**No (n=0)**	**Yes (n=35)**	**No (n=20)**
Age of respondent (in years)	35.32	34.83	36.76	30.20	34.52	42.33	35.74	N/A	36.14	36.15
Gender of the respondent (male:female)	100%:0%	100%:0%	100%:0%	100%:0%	100%:0%	100%:0%	100%:0%	N/A	100%:0%	100%:0%
No. of children	2.54	3.33	2.86	1.6	2.54	3.0	2.65	N/A	2.83	2.55
No. of dependents	7.88	10.33	8.14	8.0	8.13	7.83	8.06	N/A	8.23	7.9
No. in the household	7.12	6.83	6.94	7.6	7.04	6.0	7.11	N/A	7.34	6.55
Gender of the household head (male:female)	88%:12%	67%:33%	86%:14%	100%:0%	85%:15%	100%:0%	87%:13%	N/A	91%:9%	80%:20%
Age of the household head (in years)	44.0	51.33	44.73	43.0	44.59	42.33	44.61	N/A	43.91	46.5

Zimbabwe non-staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=165)**	**No (n=16)**	**Yes (n=154)**	**No (n=36)**	**Yes (n=154)**	**No (n=26)**	**Yes (n=189)**	**No (n=11)**	**Yes (n=211)**	**No (n=10)**
Age of respondent (in years)	42.62	33.69	42.12	43.92	42.24	42.62	42.73	47.73	43.69	37.6
Gender of the respondent (male:female)	34%:65%	50%:50%	36%:62%	44%:56%	32%:67%	58%:42%	38%:61%	27%:73%	36%:63%	20%:80%
No. of children	4.3	2.38	4.21	4.5	4.24	3.73	4.22	6.64	4.53	2.4
No. of dependents	5.45	4.63	5.45	4.94	5.39	4.81	5.45	3.82	5.42	3.9
No. in the household	6.6	5.75	6.67	6.64	6.56	6.58	6.65	8.0	6.72	5.7
Gender of the household head (male:female)	69%:31%	75%:25%	70%:30%	69%:31%	68%:32%	85%:15%	70%:30%	73%:27%	68%:32%	90%:10%
Age of the household head (in years)	47.45	42.13	47.34	47.83	46.74	49.73	47.64	52.64	48.44	47.8

Table 76: Two tables showing the impact of various demographic factors on attitudes towards tourism and conservation, for staff and non-staff respondents

Total staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=303)**	**No (n=58)**	**Yes (n=337)**	**No (n=46)**	**Yes (n=295)**	**No (n=74)**	**Yes (n=380)**	**No (n=3)**	**Yes (n=234)**	**No (n=138)**
Age of respondent (in years)	34.21	33.74	34.24	35.28	33.94	34.76	34.25	37.0	35.07	33.41
Gender of the respondent (male:female)	63%:37%	52%:48%	62%:38%	57%:44%	65%:35%	47%:53%	61%:38%	67%:33%	65%:35%	55%:45%
No. of children	2.41	2.62	2.48	2.63	2.4	2.69	2.47	4.33	2.68	2.24
No. of dependents	7.44	6.66	7.28	7.52	7.34	7.24	7.27	7.67	7.35	7.11
No. in the household	6.27	5.76	6.32	6.09	6.3	6.16	6.32	6.0	5.97	6.99
Gender of the household head (male:female)	66%:30%	69%:31%	66%:30%	61%:39%	66%:30%	62%:37%	66%:31%	100%:0%	74%:26%	59%:41%
Age of the household head (in years)	45.14	42.0	44.87	43.91	45.26	41.92	44.75	43.67	44.44	45.31

Total non-staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=691)**	**No (n=411)**	**Yes (n=967)**	**No (n=231)**	**Yes (n=767)**	**No (n=299)**	**Yes (n=1220)**	**No (n=104)**	**Yes (n=1104)**	**No (n=292)**
Age of respondent (in years)	38.75	37.55	38.59	38.47	38.16	39.47	39.02	41.05	40.00	37.7
Gender of the respondent (male:female)	40%:60%	43%:57%	41%:59%	39%:61%	40%:60%	42%:58%	42%:58%	21%:79%	40%:60%	40%:60%
No. of children	3.48	3.54	3.48	3.85	3.37	3.99	3.5	4.5	3.78	2.83
No. of dependents	4.95	4.97	4.93	5.41	4.94	4.94	5.0	4.49	5.08	4.21
No. in the household	6.86	5.95	6.8	5.77	6.63	5.91	6.57	5.9	6.46	6.56
Gender of the household head (male:female)	65%:35%	70%:30%	65%:35%	69%:31%	63%:37%	73%:27%	66%:34%	58%:42%	67%:33%	57%:43%
Age of the household head (in years)	46.9	44.77	46.95	43.91	46.18	45.35	46.70	46.87	46.55	48.65

In terms of staff and non-staff respondents, Tables 77 and 78 show which of the above demographic variables were significant, using chi-square tests and Mann-Whitney U tests.

Table 77: Staff respondents only: Statistical impact of various variables on attitudes to tourism and conservation

Total staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=303)**	**No (n=58)**	**Yes (n=337)**	**No (n=46)**	**Yes (n=295)**	**No (n=74)**	**Yes (n=380)**	**No (n=3)**	**Yes (n=234)**	**No (n=138)**
Age of respondent (in years)	Not Significant		Not Significant		Not Significant		Not Significant		Not Significant	
Gender of the respondent (male:female)	Not Significant		Not Significant		M=.65; SE=.028	M=.47; SE=.58	Not Significant		Not Significant	
No. of children	Not Significant		Not Significant		Not Significant		Not Significant		Not Significant	
No. of dependents	Not Significant		Not Significant		Not Significant		Not Significant		Not Significant	
No. in the household	Not Significant		Not Significant		Not Significant		Not Significant		Not Significant	
Gender of the household head (male:female)	Not Significant		Not Significant		Not Significant		Not Significant		M=.74; SE=.029	M=.59; SE=0.42
Age of the household head (in years)	Not Significant		Not Significant		Not Significant		Not Significant		Not Significant	

Table 78: Non-staff respondents only: Statistical impact of various variables on attitudes to tourism and conservation

Total non-staff sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=691)**	**No (n=411)**	**Yes (n=967)**	**No (n=231)**	**Yes (n=767)**	**No (n=299)**	**Yes (n=1220)**	**No (n=104)**	**Yes (n=1104)**	**No (n=292)**
Age of respondent (in years)	Not Significant		Not Significant		Not Significant		Not Significant		Not Significant	
Gender of the respondent (male:female)	Not Significant		Not Significant		Not Significant		M=.42; SE=.014	M=.21; SE=.040	Not Significant	
No. of children	Not Significant		Not Significant		M= 3.37; SE.100	M=3.99; SE=.193	M=3.5; SE=.086	M=4.5; SE=.355	Not Significant	
No. of dependents	Not Significant		Not Significant		Not Significant		Not Significant		Not Significant	
No. in the household	Not Significant		Not Significant		M=6.63; SE=5.91	M=5.91; SE=.254	Not Significant		Not Significant	
Gender of the household head (male:female)	Not Significant		Not Significant		M=.63: SE=.017	M=.73; SE=.026	Not Significant		M=.67; SE=.014	M=.57; SE=.029
Age of the household head (in years)	M=46.9; SE=.563	M=44.77; SE=.809	Not Significant		Not Significant		M=46.70; SE=.452	M=46.87; SE=1.767	Not Significant	

Table 79: Total sample: Descriptive statistics of various demographic factors affecting attitudes to tourism and conservation

Total sample	**Has there been a *positive change* in your village due to tourism?**		**Do the tourism camps *create jobs*?**		**Does tourism *reduce poverty* in the area?**		**Is it important to conserve trees, plants, animals, water, etc. i.e. is *conservation important*?**		**Any *problems with wild animals*?**	
Response	**Yes (n=994)**	**No (n=469)**	**Yes (n=1304)**	**No (n=277)**	**Yes (n=1062)**	**No (n=373)**	**Yes (n=1600)**	**No (n=107)**	**Yes (n=1338)**	**No (n=432)**
Age of respondent (in years)	37.37	37.08	37.47	37.94	36.99	38.53	37.89	40.93	39.14	36.32
Gender of the respondent (male:female)	47%:52%	44%:56%	46%:54%	42%:58%	47%:53%	43%:57%	47%:53%	22%:78%	44%:56%	45%:55%
No. of children	3.15	3.43	3.22	3.65	3.10	3.73	3.26	4.5	3.59	2.64
No. of dependents	5.71	5.19	5.55	5.77	5.62	5.42	5.55	4.58	5.49	5.14
No. in the household	6.68	5.93	6.68	5.82	6.54	5.96	6.51	5.91	6.38	6.7
Gender of the household head (male:female)	65%:33%	70%:30%	65%:33%	68%:32%	64%:35%	71%:29%	66%:33%	59%:41%	68%:32%	57%:43%
Age of the household head (in years)	46.37	44.42	46.42	43.91	45.93	44.67	46.24	46.77	46.17	47.57

1. COUNTRY STUDY SITE ATTITUDE PROBITS, INCLUDING STAFF & NON-STAFF RESPONDENTS

Botswana Sample

Figure 46: Botswana sample attitude one Probit results - create jobs

```
Iteration 0:   log likelihood = -102.87973
Iteration 1:   log likelihood = -87.168373
Iteration 2:   log likelihood = -86.635342
Iteration 3:   log likelihood = -86.629979
Iteration 4:   log likelihood = -86.629978

Probit regression, reporting marginal effects           Number of obs =    275
                                                        LR chi2(15)   =  32.50
                                                        Prob > chi2   = 0.0055
Log likelihood = -86.629978                             Pseudo R2     = 0.1579

------------------------------------------------------------------------------
Create~s |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*|    .0609035   .0524739     1.01   0.313   .276364  -.041943   .16375
     age |    .0022658   .0023397     0.97   0.333   31.9927   -.00232  .006852
  Gender*|    .0056345   .0428757     0.13   0.896   .432727    -.0784  .089669
children |   -.0048158   .0107275    -0.45   0.655   2.08364  -.025841   .01621
depend~s |    .0038622   .0060943     0.63   0.528   5.83636  -.008082  .015807
    nohh |   -.0047205   .0071898    -0.66   0.512   5.94545  -.018812  .009371
nound~20 |     .004984   .0085791     0.58   0.561   3.00364  -.011831  .021799
Gender~d*|   -.0396639   .0432597    -0.90   0.367   .549091  -.124451  .045124
AgeHHh~d |   -.0010952   .0014198    -0.77   0.442   44.1527  -.003878  .001688
YearsE~d |    .0073866   .0068108     1.08   0.278   7.58909  -.005962  .020736
Curren~d*|   -.0512059   .0834189    -0.70   0.487   .094545  -.214704  .112292
noinco~s |    .0540336   .0363298     1.47   0.141   1.22909  -.017172  .125239
loginc~e |    .0015594   .0147798     0.11   0.916   3.97673  -.027408  .030527
Family~d*|    .0612445   .0386362     1.60   0.110   .530909  -.014481   .13697
Conser~t*|     .215303   .1133652     2.53   0.011   .909091  -.006889  .437495
---------+--------------------------------------------------------------------
  obs. P |    .8763636
 pred. P |    .9088311  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

Figure 47: Botswana sample attitude two Probit results - reduce poverty

```
Iteration 0:   log likelihood =  -122.0147
Iteration 1:   log likelihood =  -107.4075
Iteration 2:   log likelihood = -106.71447
Iteration 3:   log likelihood = -106.70308
Iteration 4:   log likelihood = -106.70308

Probit regression, reporting marginal effects           Number of obs =    272
                                                        LR chi2(15)   =  30.62
                                                        Prob > chi2   = 0.0099
Log likelihood = -106.70308                             Pseudo R2     = 0.1255

------------------------------------------------------------------------------
Reduce~y |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*|   -.1639265   .1059454    -1.72   0.086   .275735  -.371576  .043723
     age |    .0033057   .0029581     1.12   0.264   32.4338  -.002492  .009103
  Gender*|    .0561036   .0509594     1.08   0.280     .4375  -.043775  .155982
children |   -.0071322   .0142295    -0.50   0.617   2.10294  -.035022  .020757
depend~s |    .0149865    .007787     1.87   0.061   5.81618  -.000276  .030249
    nohh |    .0051771   .0096544     0.53   0.593   5.84559  -.013745  .024099
nound~20 |   -.0153881   .0109934    -1.39   0.165   2.92279  -.036935  .006159
Gender~d*|   -.0429822   .0517556    -0.81   0.415   .566176  -.144421  .058457
AgeHHh~d |   -.0014798   .0017103    -0.86   0.389   44.2022  -.004832  .001872
YearsE~d |    .0107449    .008573     1.25   0.210   7.56985  -.006058  .027548
Curren~d*|   -.2060047   .1190912    -2.06   0.040   .110294  -.439419   .02741
noinco~s |   -.0343688   .0424562    -0.81   0.420   1.22059  -.117581  .048844
loginc~e |     .02555   .0199281     1.27   0.206   3.97912  -.013508  .064608
Family~d*|    .1044153   .0461345     2.30   0.022   .551471   .013993  .194837
Conser~t*|    .1937416   .1280734     1.84   0.065   .926471  -.057278  .444761
---------+--------------------------------------------------------------------
  obs. P |    .8345588
 pred. P |     .867031  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

Figure 48: Botswana sample attitude five Probit results - problem animals

```
Iteration 0:   log likelihood = -130.66466
Iteration 1:   log likelihood = -98.486905
Iteration 2:   log likelihood = -95.464118
Iteration 3:   log likelihood = -95.153982
Iteration 4:   log likelihood = -95.143464
Iteration 5:   log likelihood =  -95.14344

Probit regression, reporting marginal effects           Number of obs =    293
                                                        LR chi2(15)   =  71.04
                                                        Prob > chi2   = 0.0000
Log likelihood =  -95.14344                             Pseudo R2     = 0.2719

------------------------------------------------------------------------------
Proble~s |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*  -.2276687   .0978055    -2.95   0.003   .259386  -.419364 -.035973
     age    .0029721   .0029242     0.99   0.323   32.3993  -.002759  .008703
  Gender*  -.0415542   .0422822    -1.01   0.312   .430034  -.124426  .041317
children    .0134392   .0139994     0.97   0.330   2.13993  -.013999  .040877
depend~s   -.0086257   .0038303    -2.30   0.021   5.82594  -.016133 -.001119
    nohh   -.0014257   .0060123    -0.24   0.813   5.85324   -.01321  .010358
nound~20    .0164031   .0108092     1.46   0.144   2.93174  -.004783  .037589
Gender~d*   .0785586   .0451891     1.86   0.062   .556314   -.01001  .167128
AgeHHh~d   -.0003114   .0011481    -0.27   0.787   44.0444  -.002562  .001939
YearsE~d   -.0006969   .0068517    -0.10   0.919   7.45734  -.014126  .012732
Curren~d*   -.038175   .0784378    -0.54   0.587   .105802   -.19191   .11556
noinco~s   -.0936959   .0317453    -3.02   0.003   1.22526  -.155916 -.031476
loginc~e    -.002615   .0167516    -0.16   0.876   3.93369  -.035448  .030218
Family~d*    .026532   .0324058     0.82   0.411   .525597  -.036982  .090046
Conser~t*  -.0600304   .0517275    -0.75   0.453   .904437  -.161415  .041354
---------+--------------------------------------------------------------------
  obs. P    .8361775
 pred. P    .9190033  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

Malawi Sample

Figure 49: Malawi sample attitude one Probit results - create jobs

```
Iteration 0:   log likelihood = -189.88589
Iteration 1:   log likelihood = -168.24828
Iteration 2:   log likelihood = -168.00275
Iteration 3:   log likelihood =  -168.0026

Probit regression, reporting marginal effects           Number of obs =    276
                                                        LR chi2(14)   =  43.77
                                                        Prob > chi2   = 0.0001
Log likelihood =  -168.0026                             Pseudo R2     = 0.1152

------------------------------------------------------------------------------
Create~s |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*  -.0107635   .1036112    -0.10   0.917   .268116  -.213838  .192311
     age    .0012229   .0066505     0.18   0.854   38.1449  -.011812  .014258
  Gender*   .2394583   .0858784     2.71   0.007   .532609    .07114  .407777
children    .0018381   .0177739     0.10   0.918   3.98913  -.032998  .036674
depend~s   -.0109194   .0126661    -0.86   0.389   5.44928  -.035745  .013906
    nohh    .0839361   .0337774     2.48   0.013   4.94565   .017734  .150139
nound~20   -.0843911   .0363067    -2.32   0.020    3.1087  -.155551 -.013231
Gender~d*  -.1772062   .0890484    -1.87   0.061   .811594  -.351738 -.002675
AgeHHh~d   -.0021388    .006186    -0.35   0.729   40.2899  -.014263  .009986
YearsE~d    .0275391    .010717     2.57   0.010   4.54348   .006534  .048544
Curren~d*  -.1406679   .1630754    -0.85   0.394   .047101   -.46029  .178954
noinco~s   -.0510506   .0533175    -0.96   0.338   1.42391  -.155551   .05345
loginc~e    .0300221   .0281664     1.07   0.286    3.3438  -.025183  .085227
Conser~t*   .1439027   .1010905     1.41   0.158   .865942  -.054231  .342036
---------+--------------------------------------------------------------------
  obs. P    .5507246
 pred. P    .5579629  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

Figure 50: Malawi sample attitude two Probit results - reduce poverty

```
Iteration 0:   log likelihood = -191.97487
Iteration 1:   log likelihood = -171.39005
Iteration 2:   log likelihood = -171.04501
Iteration 3:   log likelihood = -171.04453
Iteration 4:   log likelihood = -171.04453

Probit regression, reporting marginal effects           Number of obs =    278
                                                        LR chi2(14)   =  41.86
                                                        Prob > chi2   = 0.0001
Log likelihood = -171.04453                             Pseudo R2     = 0.1090

------------------------------------------------------------------------------
Reduce~y |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*|    .0797308   .1005767     0.79   0.428    .26259  -.117396  .276857
     age |     -.00749   .0066373    -1.13   0.259   38.2626  -.020499  .005519
  Gender*|      .15161   .0882246     1.70   0.090    .528777  -.021307  .324527
children |    .0209031   .0179527     1.16   0.244   3.97842  -.014284   .05609
depend~s |   -.0000955   .0123782    -0.01   0.994   5.38849  -.024356  .024165
    nohh |   -.0049741   .0305906    -0.16   0.871   4.86691   -.06493  .054982
nound~20 |   -.0312477    .034069    -0.92   0.359   3.08273  -.098022  .035526
Gender~d*|   -.2059527   .0943597    -2.12   0.034   .798561  -.390894 -.021011
AgeHHh~d |    .0018715   .0061333     0.31   0.760   40.3201   -.01015  .013893
YearsE~d |     .017168   .0106347     1.61   0.106   4.56835  -.003676  .038012
Curren~d*|    .1072903    .163278     0.65   0.514   .046763  -.212729  .427309
noinco~s |    .0433682   .0531244     0.82   0.414   1.41367  -.060754   .14749
loginc~e |    .0298559   .0284044     1.05   0.293   3.31126  -.025816  .085528
Conser~t*|    .2249277   .0920033     2.20   0.028   .866906   .044605  .405251
---------+--------------------------------------------------------------------
  obs. P |    .4640288
 pred. P |    .4556221  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

Figure 51: Malawi sample attitude five Probit results - problem animals

```
Iteration 0:   log likelihood =  -80.02078
Iteration 1:   log likelihood =   -69.5504
Iteration 2:   log likelihood = -68.930094
Iteration 3:   log likelihood = -68.921124
Iteration 4:   log likelihood = -68.921121

Probit regression, reporting marginal effects           Number of obs =    286
                                                        LR chi2(14)   =  22.20
                                                        Prob > chi2   = 0.0746
Log likelihood = -68.921121                             Pseudo R2     = 0.1387

------------------------------------------------------------------------------
Proble~s |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*|   -.0691679   .0667227    -1.22   0.222    .258741  -.199942  .061606
     age |      .00072   .0021116     0.34   0.731   38.2517  -.003419  .004859
  Gender*|    .0300772   .0403944     0.75   0.450    .527972  -.049094  .109249
children |    .0170452    .009592     1.71   0.088   3.96853  -.001755  .035845
depend~s |   -.0036813   .0049996    -0.74   0.462   5.31469   -.01348  .006118
    nohh |    .0054008   .0158134     0.34   0.733   4.86713  -.025593  .036394
nound~20 |   -.0023901    .017024    -0.14   0.889   3.06993  -.035757  .030976
Gender~d*|    .0356383   .0516896     0.78   0.434    .804196  -.065671  .136948
AgeHHh~d |   -.0030496   .0018791    -1.68   0.092   40.4266  -.006733  .000633
YearsE~d |   -.0003549   .0046964    -0.08   0.940   4.50699   -.00956   .00885
Curren~d*|   -.0727262   .1129881    -0.83   0.405   .048951  -.294179  .148726
noinco~s |    .0324617   .0250218     1.29   0.198   1.41608   -.01658  .081504
loginc~e |   -.0097937   .0125708    -0.77   0.441   3.30367  -.034432  .014845
Conser~t*|   -.0300785   .0354014    -0.69   0.487   .867133  -.099464  .039307
---------+--------------------------------------------------------------------
  obs. P |    .9195804
 pred. P |    .9444599  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

Namibia Sample

Figure 52: Namibia sample attitude one Probit results - create jobs

```
note: ConservationImportant != 1 predicts success perfectly
      ConservationImportant dropped and 4 obs not used

Iteration 0:   log likelihood = -71.935707
Iteration 1:   log likelihood = -58.533664
Iteration 2:   log likelihood = -57.169094
Iteration 3:   log likelihood = -57.030391
Iteration 4:   log likelihood = -57.026127
Iteration 5:   log likelihood = -57.026113

Probit regression, reporting marginal effects           Number of obs =    224
                                                        LR chi2(14)   =  29.82
                                                        Prob > chi2   = 0.0081
Log likelihood = -57.026113                             Pseudo R2     = 0.2073

------------------------------------------------------------------------------
Create~s |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*|    .0791568   .0292568     1.97   0.049   .236607   .021814  .136499
     age |   -.0001174   .0016369    -0.07   0.943   35.7277  -.003326  .003091
  Gender*|    .0058812   .0336654     0.18   0.861   .535714  -.060102  .071864
children |    .0096297   .0074833     1.27   0.205   3.32589  -.005037  .024297
depend~s |   -.0033818   .0029812    -1.18   0.240     6.625  -.009225  .002461
    nohh |    .0064993   .0048549     1.26   0.206   7.86161  -.003016  .016015
nound~20 |   -.0063775   .0050838    -1.18   0.238   4.23661  -.016342  .003587
Gender~d*|    .0044485   .0335217     0.13   0.894     .5625  -.061253   .07015
AgeHHh~d |    .0013252   .0012744     1.04   0.299   45.1875  -.001173  .003823
YearsE~d |    .0053481   .0041818     1.33   0.183   6.59375  -.002848  .013544
Curren~d*|    .0268215     .03005     0.78   0.436     .1875  -.032075  .085718
noinco~s |   -.0241142   .0192496    -1.23   0.219   1.64732  -.061843  .013614
loginc~e |   -.0175937   .0144421    -1.23   0.218   5.07799    -.0459  .010712
Family~d*|     .062317   .0395096     1.78   0.076   .647321  -.01512  .139754
---------+--------------------------------------------------------------------
  obs. P |    .9017857
 pred. P |     .947241  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

Figure 53: Namibia sample attitude two Probit results - reduce poverty

```
Iteration 0:   log likelihood = -111.00737
Iteration 1:   log likelihood = -94.717012
Iteration 2:   log likelihood =  -94.17122
Iteration 3:   log likelihood = -94.167321
Iteration 4:   log likelihood = -94.167321

Probit regression, reporting marginal effects           Number of obs =    195
                                                        LR chi2(15)   =  33.68
                                                        Prob > chi2   = 0.0038
Log likelihood = -94.167321                             Pseudo R2     = 0.1517

------------------------------------------------------------------------------
Reduce~y |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*|    .1734025   .0729965     1.99   0.046   .271795   .030332  .316473
     age |   -.0016053   .0033079    -0.49   0.628   35.2718  -.008089  .004878
  Gender*|    .2126352   .0775525     2.70   0.007   .548718   .060635  .364635
children |   -.0070507   .0109762    -0.64   0.520   3.23077  -.028564  .014462
depend~s |   -.0097505   .0064569    -1.50   0.133       6.2  -.022406  .002905
    nohh |   -.0042994   .0048203    -0.89   0.373   7.56923  -.013747  .005148
nound~20 |    .0084684   .0097845     0.87   0.386   3.97949  -.010709  .027646
Gender~d*|   -.0762507   .0711043    -1.05   0.294   .574359  -.215613  .063111
AgeHHh~d |   -.0025084   .0025115    -1.00   0.318   45.5846  -.007431  .002414
YearsE~d |    .0072366   .0091769     0.79   0.431   6.70256   -.01075  .025223
Curren~d*|   -.1107725   .0934311    -1.26   0.208   .205128  -.293894  .072349
noinco~s |   -.0060776   .0454985    -0.13   0.894   1.68205  -.095253  .083098
loginc~e |    .0433842   .0314678     1.38   0.168   5.14405  -.018291   .10506
Family~d*|    .0631045   .0755127     0.85   0.395   .615385  -.084898  .211107
Conser~t*|    .1187985   .2223507     0.59   0.558   .974359  -.317001  .554598
---------+--------------------------------------------------------------------
  obs. P |    .7435897
 pred. P |     .783238  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

Figure 54: Namibia sample attitude five Probit results - problem animals

```
Iteration 0:   log likelihood = -193.24288
Iteration 1:   log likelihood = -167.28258
Iteration 2:   log likelihood = -166.87248
Iteration 3:   log likelihood = -166.87184

Probit regression, reporting marginal effects                 Number of obs =    279
                                                              LR chi2(15)   =  52.74
                                                              Prob > chi2   = 0.0000
Log likelihood = -166.87184                                   Pseudo R2     = 0.1365

------------------------------------------------------------------------------
Proble~s |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*  -.0328445   .1007943    -0.33   0.745   .193548  -.230398  .164709
     age   -.0077097    .003521    -2.19   0.029   36.4301  -.014611 -.000809
  Gender*  -.0261273   .0738611    -0.35   0.724   .537634  -.170892  .118638
children    .0245754   .0147192     1.67   0.095   3.37276  -.004274  .053424
depend~s    .0023529    .005414     0.43   0.664   6.24731  -.008258  .012964
    nohh     .008563   .0059648     1.44   0.151   7.49462  -.003128  .020254
nound~20      .00362   .0098145     0.37   0.712   4.06452  -.015616  .022856
Gender~d*    .093401   .0743458     1.25   0.212   .562724  -.052314  .239116
AgeHHh~d   .0021005   .0025964     0.81   0.419   44.9247  -.002988  .007189
YearsE~d   -.0375811   .0095667    -3.93   0.000   5.91039  -.056332 -.018831
Curren~d*   .0308207   .0932689     0.33   0.741   .182796  -.151983  .213624
noinco~s    .1676594   .0487315     3.44   0.001   1.61649   .072147  .263171
loginc~e   -.0385527    .031873    -1.21   0.226   5.01251  -.101023  .023917
Family~d*  -.0074261   .0698058    -0.11   0.915   .566308  -.144243  .129391
Conser~t*  -.3485656   .1687132    -1.54   0.123   .978495  -.679237 -.017894
---------+--------------------------------------------------------------------
  obs. P     .483871
 pred. P    .4830099  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

South Africa Sample

Figure 55: South Africa sample attitude one Probit results - create jobs

```
Iteration 0:   log likelihood = -91.648359
Iteration 1:   log likelihood = -75.692692
Iteration 2:   log likelihood = -74.992875
Iteration 3:   log likelihood = -74.984206
Iteration 4:   log likelihood = -74.984204

Probit regression, reporting marginal effects                 Number of obs =    286
                                                              LR chi2(15)   =  33.33
                                                              Prob > chi2   = 0.0042
Log likelihood = -74.984204                                   Pseudo R2     = 0.1818

------------------------------------------------------------------------------
Create~s |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*  -.1804246   .0859915    -2.72   0.007    .20979  -.348965 -.011884
     age    .0003393   .0019011     0.18   0.858   41.7413  -.003387  .004065
  Gender*  -.0191916   .0360537    -0.55   0.582   .339161  -.089855  .051472
children    .0065968   .0101522     0.65   0.516   3.14685  -.013301  .026495
depend~s   -.0067567   .0057666    -1.18   0.236   4.38811  -.018059  .004546
    nohh   -.0011109   .0074725    -0.15   0.882   6.66434  -.015757  .013535
nound~20   -.0032272   .0104067    -0.31   0.757   2.93357  -.023624   .01717
Gender~d*   .0713428   .0410117     1.92   0.055    .63986  -.009039  .151724
AgeHHh~d     .000636   .0013176     0.48   0.630   52.7552  -.001946  .003218
YearsE~d    .0066352   .0056376     1.17   0.242   7.96154  -.004414  .017685
Curren~d*   .0052451   .0630004     0.08   0.935   .097902  -.118233  .128724
noinco~s   -.0095878   .0210381    -0.46   0.649   2.02098  -.050822  .031646
loginc~e    .0094906   .0261764     0.36   0.718   5.42636  -.041814  .060795
Family~d*   .0554782   .0291632     1.81   0.071   .398601  -.001681  .112637
Conser~t*   .3914402   .4155738     1.34   0.180   .993007  -.423069  1.20595
---------+--------------------------------------------------------------------
  obs. P    .9020979
 pred. P    .9352682  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

Figure 56: South Africa sample attitude two Probit results - reduce poverty

```
note: ConservationImportant != 1 predicts success perfectly
      ConservationImportant dropped and 2 obs not used

Iteration 0:   log likelihood =  -99.10153
Iteration 1:   log likelihood = -87.839999
Iteration 2:   log likelihood =  -87.46124
Iteration 3:   log likelihood = -87.458264
Iteration 4:   log likelihood = -87.458264

Probit regression, reporting marginal effects           Number of obs =    217
                                                        LR chi2(14)   =  23.29
                                                        Prob > chi2   = 0.0558
Log likelihood = -87.458264                             Pseudo R2     = 0.1175

------------------------------------------------------------------------------
Reduce~y |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*  -.0919763    .086349    -1.17   0.243   .253456  -.261217  .077265
     age    .0004012   .0033748     0.12   0.905   40.9631  -.006213  .007016
  Gender*   .0149341   .0530201     0.28   0.780   .345622  -.088983  .118852
children    .0028296   .0208574     0.14   0.892   2.99078   -.03805  .043709
depend~s   -.0140429   .0099808    -1.40   0.163   4.54839  -.033605  .005519
    nohh    .0011077   .0123844     0.09   0.929   6.75576  -.023165  .025381
nound~20    .0025463   .0194221     0.13   0.896   3.04608   -.03552  .040613
Gender~d*   .0217772   .0570383     0.39   0.699   .617512  -.090016   .13357
AgeHHh~d    .0026228   .0022363     1.17   0.242   52.3226   -.00176  .007006
YearsE~d   -.0037759   .0100934    -0.37   0.709   8.01843  -.023559  .016007
Curren~d*   .0412345   .0828556     0.45   0.652   .096774   -.12116  .203629
noinco~s   -.0160868   .0347823    -0.46   0.643   2.06452  -.084259  .052085
loginc~e   -.0430081   .0438109    -0.98   0.328   5.47608  -.128876   .04286
Family~d*   .1371782   .0471816     2.64   0.008   .410138   .044704  .229652
---------+--------------------------------------------------------------------
  obs. P    .8294931
 pred. P    .8604922  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

Figure 57: South Africa sample attitude five Probit results - problem animals

```
Iteration 0:   log likelihood = -216.01905
Iteration 1:   log likelihood =  -201.6534
Iteration 2:   log likelihood = -201.55656
Iteration 3:   log likelihood = -201.55649

Probit regression, reporting marginal effects           Number of obs =    323
                                                        LR chi2(15)   =  28.93
                                                        Prob > chi2   = 0.0164
Log likelihood = -201.55649                             Pseudo R2     = 0.0670

------------------------------------------------------------------------------
Proble~s |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*   .0254003   .0938848     0.27   0.788   .188854  -.158611  .209411
     age    .0108638   .0036811     2.94   0.003   42.1981   .003649  .018079
  Gender*   .0216616   .0629099     0.34   0.731   .331269  -.101639  .144963
children   -.0185961   .0182558    -1.02   0.309   3.18885  -.054377  .017185
depend~s    .0086491   .0118786     0.73   0.467   4.35294  -.014633  .031931
    nohh   -.0009129   .0155105    -0.06   0.953    6.6192  -.031313  .029487
nound~20   -.0226369   .0227135    -1.00   0.319    2.9226  -.067154  .021881
Gender~d*   .0605457   .0623317     0.97   0.330   .628483  -.061622  .182714
AgeHHh~d      -.0029   .0025994    -1.11   0.265   52.8978  -.007995  .002195
YearsE~d    .0128156   .0102096     1.25   0.210   7.68421  -.007195  .032826
Curren~d*   -.054298   .1118172    -0.49   0.623   .095975  -.273456   .16486
noinco~s    .0189722   .0398685     0.48   0.634    1.9969  -.059169  .097113
loginc~e    .0833004   .0451591     1.84   0.065   5.39672   -.00521  .171811
Family~d*  -.1025786   .0601035    -1.71   0.087   .377709  -.220379  .015222
Conser~t*  -.2140607   .1830705    -0.92   0.359    .98452  -.572872  .144751
---------+--------------------------------------------------------------------
  obs. P    .6099071
 pred. P    .6202594  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

Zambia Sample – OLS regression used, as sample to small for a probit regression

Figure 58: Zambia sample attitude one Probit results - create jobs

Source	SS	df	MS	Number of obs =	76
				F(15, 60) =	1.69
Model	.854239186	15	.056949279	Prob > F =	0.0786
Residual	2.02733976	60	.033788996	R-squared =	0.2964
				Adj R-squared =	0.1206
Total	2.88157895	75	.038421053	Root MSE =	.18382

CreateJobs	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
WSEmployed	.1586153	.0869087	1.83	0.073	-.015228	.3324586
age	-.0056792	.0136978	-0.41	0.680	-.0330789	.0217205
Gender	-.1036367	.0998768	-1.04	0.304	-.3034201	.0961468
children	-.0048252	.0144528	-0.33	0.740	-.0337352	.0240848
dependents	.0091524	.0106447	0.86	0.393	-.0121402	.0304449
nohh	.0057078	.0300911	0.19	0.850	-.0544833	.065899
nounder20	-.0139362	.0312029	-0.45	0.657	-.0763512	.0484788
GenderHHHead	-.0281244	.0877283	-0.32	0.750	-.2036071	.1473584
AgeHHhead	.008434	.0136604	0.62	0.539	-.0188909	.0357589
YearsEduca~d	.0128579	.0103722	1.24	0.220	-.0078895	.0336053
CurrentlyE~d	.141362	.1161233	1.22	0.228	-.0909192	.3736432
noincomeso~s	.0275071	.031117	0.88	0.380	-.0347361	.0897503
logincome	-.0394619	.0220916	-1.79	0.079	-.0836518	.0047279
FamilyEmpl~d	-.0548835	.0532179	-1.03	0.307	-.1613351	.0515682
Conservati~t	.4053104	.1524576	2.66	0.010	.1003497	.7102711
_cons	.5134661	.1938668	2.65	0.010	.1256748	.9012574

Figure 59: Zambia sample attitude two Probit results - reduce poverty

Source	SS	df	MS	Number of obs =	71
				F(15, 55) =	1.78
Model	2.8095296	15	.187301974	Prob > F =	0.0616
Residual	5.78201969	55	.105127631	R-squared =	0.3270
				Adj R-squared =	0.1435
Total	8.5915493	70	.122736419	Root MSE =	.32423

ReducePove~y	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
WSEmployed	.2769042	.1582431	1.75	0.086	-.0402221	.5940305
age	-.0196089	.0243532	-0.81	0.424	-.0684138	.029196
Gender	-.0784309	.1787142	-0.44	0.662	-.4365822	.2797203
children	-.0033125	.0272592	-0.12	0.904	-.0579412	.0513162
dependents	.0082872	.0197437	0.42	0.676	-.0312802	.0478545
nohh	-.0530301	.0521817	-1.02	0.314	-.1576047	.0515444
nounder20	.053975	.0553747	0.97	0.334	-.0569985	.1649484
GenderHHHead	-.126491	.1562497	-0.81	0.422	-.4396224	.1866405
AgeHHhead	.0173025	.024345	0.71	0.480	-.031486	.066091
YearsEduca~d	.0171129	.0193437	0.88	0.380	-.0216527	.0558786
CurrentlyE~d	.3252752	.2219203	1.47	0.148	-.119463	.7700133
noincomeso~s	.026884	.0565256	0.48	0.636	-.0863958	.1401638
logincome	-.0638236	.0402652	-1.59	0.119	-.1445169	.0168696
FamilyEmpl~d	.0853579	.0977585	0.87	0.386	-.1105545	.2812703
Conservati~t	.6824724	.2744461	2.49	0.016	.1324701	1.232475
_cons	.4099889	.3519427	1.16	0.249	-.29532	1.115298

Figure 60: Zambia sample attitude five Probit results - problem animals

Source	SS	df	MS	Number of obs =	78
Model	.28646304	15	.019097536	F(15, 62) =	0.71
Residual	1.66225491	62	.026810563	Prob > F =	0.7627
				R-squared =	0.1470
Total	1.94871795	77	.025308025	Adj R-squared =	-0.0594
				Root MSE =	.16374

ProblemAni~s	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
WSEmployed	-.0577957	.0765096	-0.76	0.453	-.2107361	.0951448
age	.009324	.0120104	0.78	0.441	-.0146843	.0333324
Gender	.0302277	.0884393	0.34	0.734	-.1465598	.2070153
children	.0017694	.0125111	0.14	0.888	-.0232398	.0267787
dependents	.0084608	.0089324	0.95	0.347	-.0093947	.0263163
nohh	-.0104575	.0256269	-0.41	0.685	-.0616849	.04077
nounder20	.006751	.0258519	0.26	0.795	-.0449263	.0584283
GenderHHHead	.0190838	.0775343	0.25	0.806	-.135905	.1740726
AgeHHhead	-.0106235	.0119383	-0.89	0.377	-.0344878	.0132408
YearsEduca~d	-.0074741	.0091315	-0.82	0.416	-.0257277	.0107795
CurrentlyE~d	.023743	.1030985	0.23	0.819	-.182348	.229834
noincomeso~s	-.0413471	.0274477	-1.51	0.137	-.0962142	.0135201
logincome	-.0206538	.0193465	-1.07	0.290	-.059327	.0180194
FamilyEmpl~d	-.0386032	.0472348	-0.82	0.417	-.1330243	.0558179
Conservati~t	.0084852	.1081573	0.08	0.938	-.2077181	.2246886
_cons	1.219327	.1625614	7.50	0.000	.894371	1.544282

Zimbabwe Sample

Figure 61: Zimbabwe sample attitude one Probit results - create jobs

```
note: CurrentlyEmployed != 0 predicts success perfectly
      CurrentlyEmployed dropped and 6 obs not used

Iteration 0:   log likelihood =  -88.96332
Iteration 1:   log likelihood = -81.499017
Iteration 2:   log likelihood = -81.382741
Iteration 3:   log likelihood = -81.382574

Probit regression, reporting marginal effects           Number of obs =    206
                                                        LR chi2(14)   =  15.16
                                                        Prob > chi2   = 0.3672
Log likelihood = -81.382574                             Pseudo R2     = 0.0852
```

Create~s	dF/dx	Std. Err.	z	P>|z|	x-bar	[95% C.I.]	
WSEmpl~d*	.1329458	.0609637	1.76	0.079	.257282	.013459	.252432
age	.0008354	.0032913	0.25	0.800	39.8932	-.005615	.007286
Gender*	-.0072496	.062554	-0.12	0.908	.529126	-.129853	.115354
children	.0082127	.0149595	0.55	0.583	3.74272	-.021107	.037533
depend~s	-.0091199	.0106297	-0.86	0.391	6.09709	-.029954	.011714
nohh	.0038375	.0118329	0.32	0.745	6.63592	-.019355	.02703
nound~20	-.0243334	.0113245	-2.13	0.033	3.81553	-.046529	-.002138
Gender~d*	-.0384305	.0601127	-0.61	0.544	.742718	-.156249	.079388
AgeHHh~d	.0005714	.0026781	0.21	0.831	46.335	-.004678	.00582
YearsE~d	.0104732	.0100179	1.04	0.299	7.54369	-.009162	.030108
noinco~s	.0650325	.0367293	1.74	0.081	1.67961	-.006956	.137021
loginc~e	-.011775	.0231761	-0.51	0.612	3.72583	-.057199	.033649
Family~d*	.1038365	.0590203	1.86	0.064	.635922	-.011841	.219514
Conser~t*	-.0544524	.1078249	-0.42	0.674	.970874	-.265785	.15688
obs. P	.8446602						
pred. P	.8648051	(at x-bar)					

(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0

Figure 62: Zimbabwe sample attitude two Probit results - reduce poverty

```
note: CurrentlyEmployed != 0 predicts success perfectly
      CurrentlyEmployed dropped and 7 obs not used

Iteration 0:   log likelihood = -82.630347
Iteration 1:   log likelihood = -73.304776
Iteration 2:   log likelihood = -72.919741
Iteration 3:   log likelihood =   -72.9165
Iteration 4:   log likelihood = -72.916499

Probit regression, reporting marginal effects           Number of obs =    199
                                                        LR chi2(14)   =  19.43
                                                        Prob > chi2   = 0.1492
Log likelihood = -72.916499                             Pseudo R2     = 0.1176

------------------------------------------------------------------------------
Reduce~y |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*|    .0720899   .0679211     0.94   0.347    .256281  -.061033  .205213
     age |   -.0035608   .0031752    -1.12   0.264    39.6332  -.009784  .002662
  Gender*|   -.0877006   .0562061    -1.55   0.120    .522613  -.197863  .022461
children |     .024446   .0149588     1.62   0.105    3.71357  -.004873  .053765
depend~s |    .0120642   .0112635     1.06   0.291    6.08543  -.010012   .03414
    nohh |   -.0078097   .0124063    -0.63   0.531    6.66332  -.032126  .016506
nound~20 |    .0052128   .0115587     0.45   0.653    3.76382  -.017442  .027867
Gender~d*|   -.0773694   .0517977    -1.28   0.199    .753769  -.178891  .024152
AgeHHh~d |   -.0002515   .0026694    -0.09   0.925    46.0553  -.005484   .00498
YearsE~d |    .0108705   .0101005     1.08   0.279    7.55276  -.008926  .030667
noinco~s |    .0073974   .0334271     0.22   0.825    1.68844  -.058119  .072913
loginc~e |    .0050974   .0222682     0.23   0.819     3.7794  -.038548  .048742
Family~d*|    .0629805   .0547992     1.19   0.234    .613065  -.044424  .170385
Conser~t*|    .1033132   .1675712     0.73   0.463    .959799   -.22512  .431747
---------+--------------------------------------------------------------------
  obs. P |    .8542714
 pred. P |    .8810185  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

Figure 63: Zimbabwe sample attitude five Probit results - problem animals

```
note: ConservationImportant != 1 predicts success perfectly
      ConservationImportant dropped and 10 obs not used

Iteration 0:   log likelihood =  -84.12817
Iteration 1:   log likelihood = -62.931336
Iteration 2:   log likelihood = -61.327989
Iteration 3:   log likelihood =   -61.2321
Iteration 4:   log likelihood = -61.231444
Iteration 5:   log likelihood = -61.231444

Probit regression, reporting marginal effects           Number of obs =    222
                                                        LR chi2(14)   =  45.79
                                                        Prob > chi2   = 0.0000
Log likelihood = -61.231444                             Pseudo R2     = 0.2722

------------------------------------------------------------------------------
Proble~s |      dF/dx   Std. Err.      z    P>|z|     x-bar  [    95% C.I.   ]
---------+--------------------------------------------------------------------
WSEmpl~d*|   -.3881655   .1730367    -2.91   0.004    .243243  -.727311  -.04902
     age |    .0007673    .001994     0.39   0.699    40.6036  -.003141  .004676
  Gender*|    .0657261   .0564078     1.20   0.229    .531532  -.044831  .176283
children |    .0165747   .0110586     1.43   0.153    3.87387   -.0051  .038249
depend~s |   -.0062916   .0070249    -0.90   0.370     6.1036  -.02006  .007477
    nohh |    .0138703   .0088357     1.55   0.122    6.73874  -.003447  .031188
nound~20 |    .0044623   .0086415     0.53   0.598     3.7973  -.012475  .021399
Gender~d*|   -.0550078   .0340964    -1.32   0.188    .747748  -.121836   .01182
AgeHHh~d |   -.0023691   .0016147    -1.47   0.142    46.7568  -.005534  .000796
YearsE~d |    .0032582    .006928     0.47   0.639    7.67568   -.01032  .016837
Curren~d*|   -.2056844   .2319746    -1.27   0.202    .031532  -.660346  .248978
noinco~s |    -.015303   .0262101    -0.57   0.566    1.68468  -.066674  .036068
loginc~e |    .0047037   .0187283     0.25   0.802    3.76811  -.032003   .04141
Family~d*|    .0081426   .0349204     0.24   0.813    .612613    -.0603  .076585
---------+--------------------------------------------------------------------
  obs. P |    .8738739
 pred. P |    .9383515  (at x-bar)
------------------------------------------------------------------------------
(*) dF/dx is for discrete change of dummy variable from 0 to 1
    z and P>|z| correspond to the test of the underlying coefficient being 0
```

APPENDIX K - HUMAN-WILDLIFE CONFLICT (HWC) MITIGATION MEASURES

Some of the more common human-wildlife mitigation measures include:

1. COMPENSATION SCHEMES

In general, compensation schemes involve reimbursing individuals or households who have experienced some form of wildlife damage to property, crops or person. A major benefit that is often attributed to compensation schemes is that they increase people's tolerance for living with wildlife and can promote more positive attitudes towards conservation (Wagner et al., 1997, as cited in Nyhus et al., 2005 & Kaswamila et al., 2007). It can also shift the economic burden of living with wildlife to the broader public.

Compensation schemes are however highly susceptible to corruption and can serve to generate unintended, and often negative, incentives, such as encouraging overstocking and therefore greater competition for grazing (Prins, 200; Bulte & Rondeau, 2005, as cited in Romañach et al., 2007; Nyhus et al. 2005; Sindiga, 1995; Walpole & Thouless, 2005; Woodroffe et al., 2005b) and consequently negative environmental impacts. Problems of moral hazard also exist with such schemes as they can result in farmers making no effort to mitigate losses because they know they will receive compensation. One way to deal with moral hazard is to require farmers to adopt observable risk-reducing measures before compensation is given. An example of this would be that farmers are required to keep their livestock in enclosures at night and compensation will only be paid if the animal is killed or injured inside the enclosure. Another way to deal with moral hazard is to have farmers bearing some of the risk by having them pay part of the loss.

Information asymmetries related to compensation and assessing wildlife damage can further hamper the successful implementation of compensation schemes. According to DeMotts and Hoon (2012) compensation can tend to reassert state control and ownership, and in the process mask inequalities in the name of a greater national good that also hides the actual costs of living with wildlife.

If implemented, compensation schemes need to have a clear and coherent policy that is understood by all stakeholders. Over and above the costs of payments made in compensation, there are also the costs of managing the scheme and verifying damages.

Nyhus et al. (2005, p. 12) suggest that if compensation schemes are to be used then they must include the following:

- Quick and accurate verification of damages;
- Prompt and fair payment for the damages;
- Long-term source of funding;
- Payment linked to sound management practices;
- An appreciation of the different socio-economic and cultural contexts that exist in communities; and
- A programme to monitor the wildlife populations involved.

2. INSURANCE SCHEMES

Insurance schemes can provide internal incentives to farmers to encourage them to take measures that reduce the probability of wildlife damage (Arntzen et al., 2007; Woodroffe et al., 2005b). Such schemes can often be more sustainable than compensation (Walpole & Thouless, 2005).

3. PERFORMANCE PAYMENTS

Performance payments, or 'payments in advance', is a scheme where farmers are rewarded for living with wildlife rather than compensated for losses incurred (Ferraro & Kiss, 2002; Jackson, Mosojane, Ferreira & van Aarde, 2008; Schwerdtner & Gruber, 2007, as cited in Bobo & Weladji, 2011). Ferraro (2001, as cited in Romañach et al., 2007) suggests that direct payments can have a large impact on people's conservation attitudes and behaviours (e.g. paying for occupied wild dog dens or the number of lions alive at the end of each year).

4. MITIGATION MEASURES – KRAALS; NOISE, FENCES; GUARDS; CHILLI; BEES, BUFFER CROPS

Traditional measures of mitigation such as traditional livestock husbandry, burning fires around fields, beating drums, traditional collective land tenure systems, etc., can often be successful in mitigating HWC (Makindi, 2010; Nyirenda et al., 2011; Osborn & Parker, 2002). Parker & Osborn (2006) found in their experiment in Zimbabwe, and it was observed by the author in Botswana, that chilli plants (*Capsicum spp.)* are less vulnerable to wildlife than other crops and they are also economically viable.

Many farmers still use guarding to mitigate HWC but there are costs associated with this which include: higher risk of malaria as most guarding is done at night, takes farmers away from their families at night, results in many sleepless nights and can be dangerous if

required to chase away animals such as elephants. Harrter et al. (2011) found that farmers in their Ugandan study also used strategies such as planting more palatable crop species further away from the forest edges, stopping cultivation or moving away from an area that is heavily raided. These strategies are however not always feasible as land is limited and farmers frequently have no alternative livelihoods.

Fencing has both positive and negative impacts. Positive impacts include that it can keep some of the larger animals inside the PA and therefore reduce crop raids, but Knickerbocker and Waithaka (2005, as cited in Kaswamila et al., 2007) found in their Kenyan study that it also had costs, such as more depredation by smaller animals such as baboons (who used the fence poles to jump onto nearby trees) and bushpigs; fencing costs were high and it interfered with the movements of wide-ranging herbivores.

5. LETHAL AND NON-LETHAL CONTROL

Lethal control can be used in instances where no other resolution is possible, but it must be carefully targeted. It can serve to engender public support for the PA by showing that there is commitment from PA managers and that they are aware that wildlife has negative impacts on local people living in the area (Woodroffe et al., 2005b). Woodroffe et al. (2005b) recommend however that lethal control not be used on its own but rather as one measure in a suite of management interventions that also includes non-lethal measures.

Non-lethal control can include sterilisation, the relocation of problem animals, repellents and deterrents, fences and barriers (Dickman, 2010; Osborn & Hill, 2005).

6. EDUCATION AND ENGAGEMENT

Education programmes and engagement with communities is a key component of HWC mitigation (Kaswamila et al., 2007; Woodroffe et al., 2005b). Engagement can include either general education and outreach which acknowledges communities' concerns and the risks they face, or it can involve devolving control and authority over HWC to communities (Western & Waithaka, 2005; Woodroffe et al., 2005b) or, ideally, it can involve a combination of the two. Any devolution of authority should however ensure that communities have the necessary technical skills and knowledge to make informed, sustainable decisions (Woodroffe et al., 2005b).

7. CONFLICT RESOLUTION COMMITTEES

Dublin and Hoare (2004) suggest the establishment of conflict resolution committees in areas that are heavily affected by HWC. These committees are required to acknowledge that the responsibility for conflict is mandated to and shared by a local partnership of stakeholders. They then allow local communities and wildlife authorities to work together to find ways to mitigate the conflict and reduce antagonism.

8. LAND-USE CHANGES, INCLUDING BUFFER ZONES

Changes in land-use and promoting a shift of land use away from agricultural livelihoods would result in a reduction in HWC (Barnes, 2002; Sitati et al., 2003, as cited in Parker & Osborn, 2006). Changing livelihoods is however not always possible in many remote, rural areas and can also take time. In such cases, Parker and Osborn (2006) suggest an improvement in agricultural practices by reducing the vulnerability of crops to damage through for example, planting chilli as a crop alternative. They also suggest that this is part of much broader land-use planning approach.

Another alternative is to include buffer zones between PAs and rural villages. These zones are important as they allow local communities access to natural resources (e.g. firewood, traditional plants) but they need to be large enough to ensure that they can sustain the local populations and their needs (Kaswamila et al., 2007). If buffer zones are not large enough it can lead to increased encroachment into the PA.

APPENDIX L - PHOTOGRAPHS OF DATA COLLECTION

Photographs of interviews (clockwise from top left): Malawi non-staff; Botswana non-staff; Namibia non-staff; Zimbabwe staff; South Africa non-staff; South Africa staff.

Photographs of interviews (clockwise from top left): Zimbabwe non-staff; Malawi staff; Botswana staff; South Africa non-staff; South Africa staff and Zambia non-staff.